



***Smart Dispatch
Configuration Guide***



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Documentation Information

This section describes the conventions and revision history of this document.

Documentation Conventions

Icon Conventions

Icon	Description
 Tip	Indicates information that can help you make better use of your product.
 Note	Indicates references that can further describe the related topics.
 Caution	Indicates situations that could cause data loss or equipment damage.
 Warning	Indicates situations that could cause minor personal injury.
 Danger	Indicates situations that could cause major personal injury or even death.

Notation Conventions

Item	Description
“ ”	The quotation marks enclose the name of a software interface element. For example, click “OK”.
Bold	The text in boldface denotes the name of a hardware button. For example, press the PTT key.
->	The symbol directs you to access a multi-level menu. For example, to select “New” from the “File” menu, we will describe it as follows: “File -> New”.

Revision History

Version	Release Date	Description
07 (V4.5)	04-2015	<ul style="list-style-type: none">● Modified the screenshots and parameter descriptions in “8.1 Basic Settings”;● Modified the screenshots and parameter descriptions in “9.1 Basic Settings”;● Updated the screenshots that include the version number of the Smart Dispatch.
06 (V4.2)	07-2014	<ul style="list-style-type: none">● Added “5.4 HDC1200 Service Settings” and “7.7 HDC1200 Service Settings”;● Updated parameters and figures in “7.5 Telemetry Settings”, “8.3 Geofencing Alarm Settings”, “8.8 Over Speed Alarm Settings”, “10.4 Setting the Radio” and “10.9 Telemetry”.
05(V4.0)	11-2013	Added the configuration of Telemetry, Encrypt, Quick GPS, Timed Message and Over Speed Alarm.
04 (V3.6)	01-2013	Added the configuration of database backup & recovery, and batch export & import.
03 (V3.5)	11-2012	Added the configuration of repeater.
02 (V3.0)	09-2012	Removed the Media Server and Remote Configurator components.
01 (R2.5)	04-2012	Initial release

1. Product Overview

1.1 Introduction

Smart Dispatch is an integrated and modular dispatch system based on the Client/Server architecture, which facilitates the construction of a complex dispatch system. It consists of the Smart Dispatch Client, Smart Dispatch Gateway, Smart Dispatch Server, repeater, dispatch station and radio. Smart Dispatch provides capabilities such as radio dispatch, GPS location, telephone interconnection, text and voice communication, making the dispatching process most efficient.

1.2 System Architecture

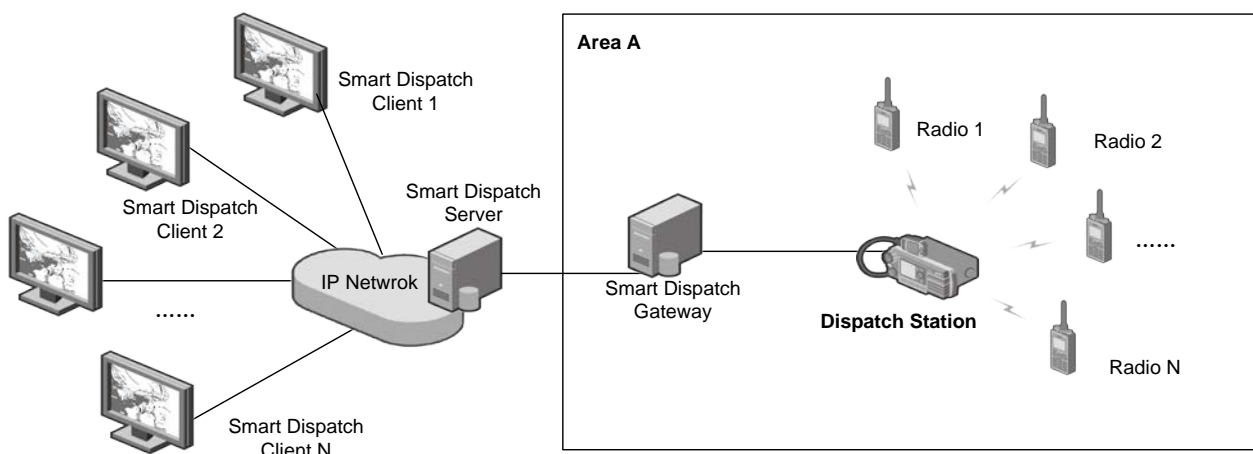
Smart Dispatch supports the single-site and multi-site dispatch system. The IP Multi-site Connect feature brings you more benefits. For details, see [“6.2 IP Multi-site Connect Mode”](#).

1.2.1 Single-site Dispatch System

You can dispatch any subscriber within the single site (e.g. Area A) via the Smart Dispatch Client. The Smart Dispatch Client can connect to the Smart Dispatch Server via the LAN or WAN.

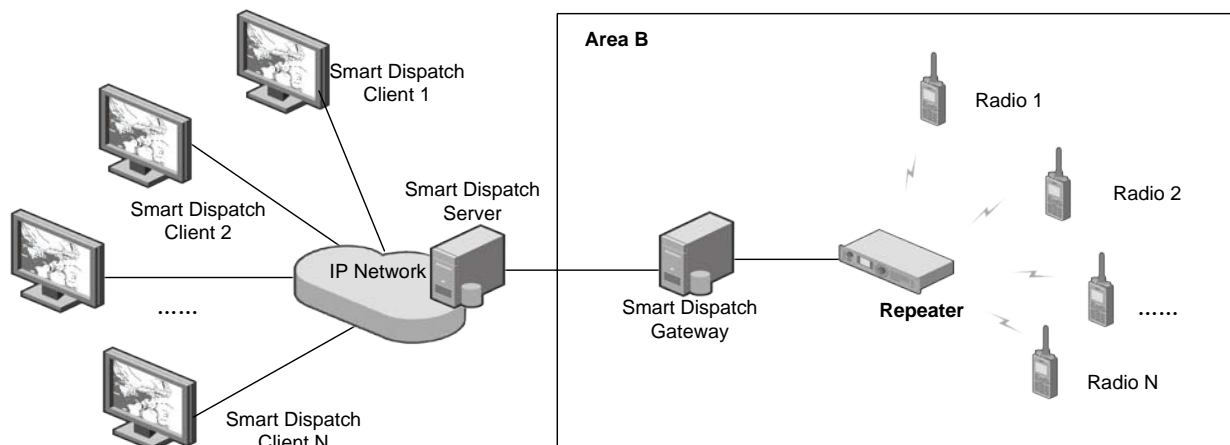
- Network Diagram 1:

One Smart Dispatch Gateway supports four dispatch stations at most. One or two dispatch stations can be deployed in a group. If only one dispatch station is available, it will be responsible for transmitting both the audio signal and GPS data. In case of two dispatch stations, one is used to transmit the audio signal while the other to transmit the GPS data.



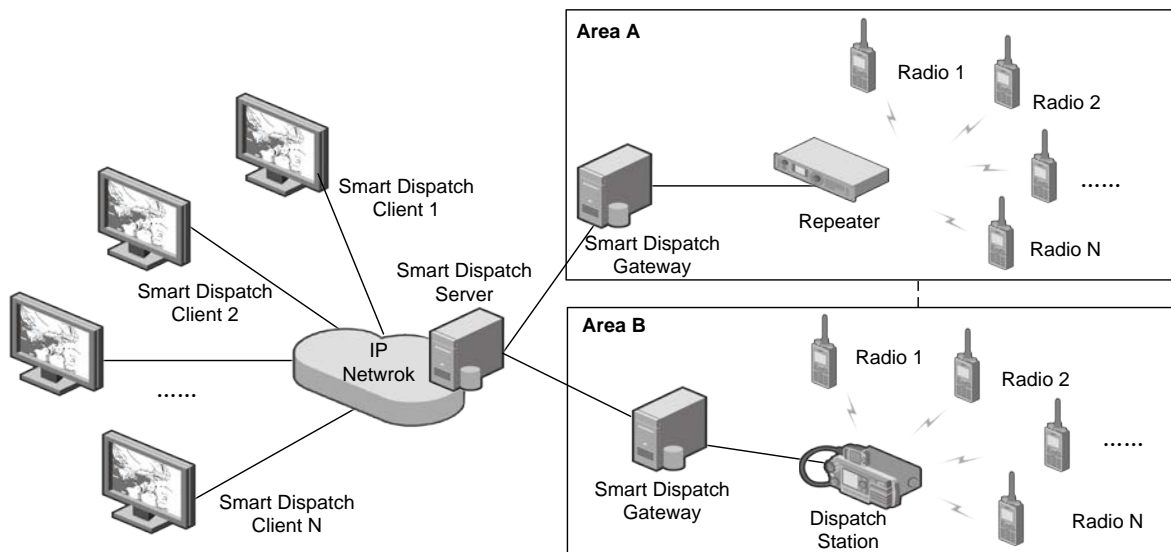
- Network Diagram 2:

In the Single Site mode, the repeater only works in the local mode. It is required to connect the repeater to the Smart Dispatch Gateway.



1.2.2 Multi-site Dispatch System

As Smart Dispatch can bring different sites together, you can dispatch any subscriber in different regions (e.g. Area A or Area B) via the Smart Dispatch Client. The Smart Dispatch Client can connect to the Smart Dispatch Server via the LAN or WAN.

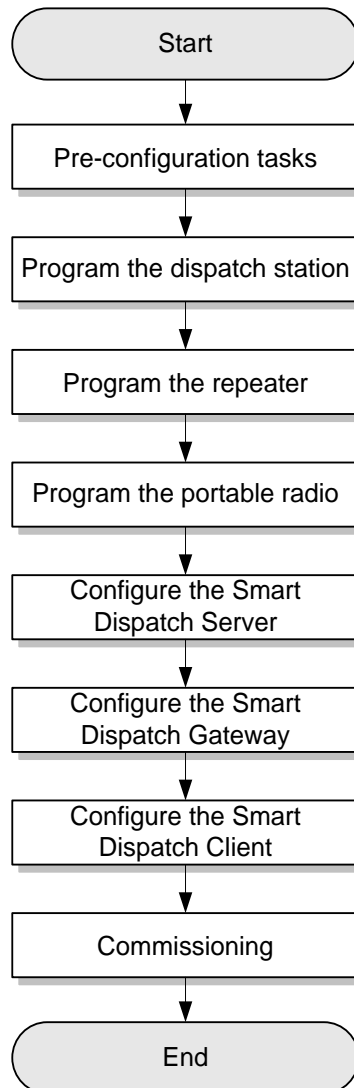


2. Configuration Flow

The following figure describes the overall flow for configuring Smart Dispatch.

Caution

Ensure you have administrative privileges before configuration.



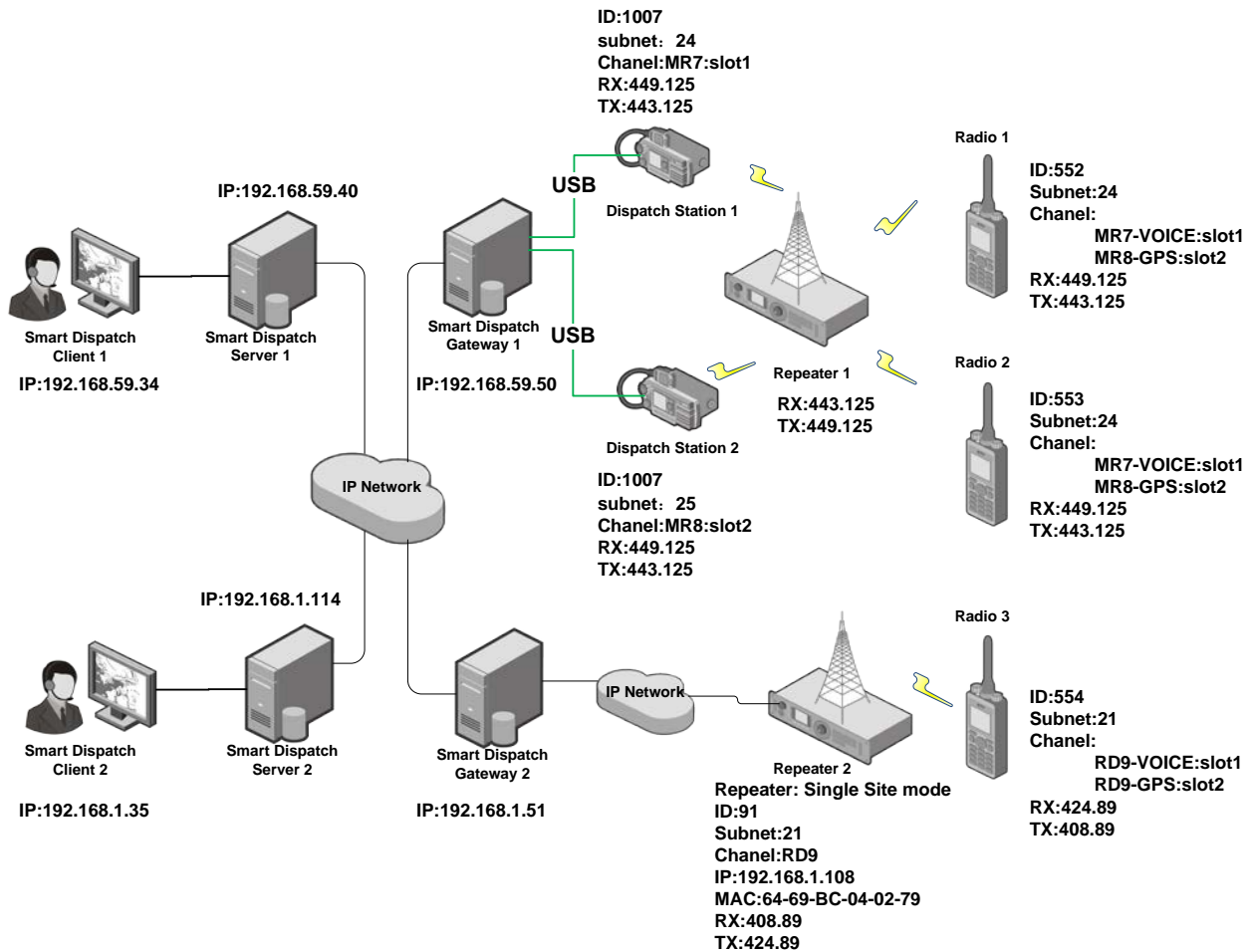
3. Planning



Note

The data in the following figure is for your reference only.

The data configuration in this guide is based on the multi-site dispatch system.



3.1 IP Planning

Network Element	IP	Subnet Mask
Smart Dispatch Client 1	192.168.59.34	255.255.255.0
Smart Dispatch Client 2	192.168.1.35	255.255.255.0
Smart Dispatch Server 1	192.168.59.40	255.255.255.0
Smart Dispatch Server 2	192.168.1.114	255.255.255.0
Smart Dispatch Gateway 1	192.168.59.50	255.255.255.0

Network Element	IP	Subnet Mask
Smart Dispatch Gateway 2	192.168.1.51	255.255.255.0
Repeater 1	/	/
Repeater 2	192.168.1.108	/

3.2 Radio Planning

Please refer to the following information when programming the dispatch station, repeater and the portable radio.

Dispatch station

Network Element	ID	Alias	RX Freq.	TX Freq.	Subnet No.	Channel	Slot	Function
Dispatch Station 1	1007	MR7	449.125	443.125	24	MR7	Slot 1	For audio transmission.
Dispatch Station 2	1007	MR8	449.125	443.125	25	MR8	Slot 2	For GPS data transmission.

Repeater

Network Element	ID	Alias	RX Freq.	TX Freq.	Channel	Slot	Function
Repeater 1	/	/	443.125	449.125	MR7-VOICE	Slot1	For data repeating.
					MR8-GPS	Slot2	
Repeater 2	91	Repeater3	408.89	424.89	RD9	Slot1	For working in the Single Site mode.
						Slot2	

Portable radio

Caution

In IP Multi-site Connect mode, be sure to enter the ID of the master repeater in the “RRS & GPS radio ID” field when programming the portable radio.

Network Element	ID	RX Freq.	TX Freq.	RRS & GPS Radio ID	Channel	Slot	Function
Portable radio 1	552	449.125	443.125	1007	MR7-VOICE	Slot 1	For audio transmission.
					MR8-GPS	Slot 2	For GPS data transmission.
Portable radio 2	553	449.125	443.125	1008	MR7-VOICE	Slot 1	For audio transmission.
					MR8-GPS	Slot 2	For GPS data transmission.
Portable radio 3	554	424.89	408.89	91	MR9	Slot 1	For audio and GPS data transmission through the repeater.

3.3 Port Planning

Port	Description
Smart Dispatch Server and Smart Dispatch Gateway	
1433	Indicates the database port.
61400	Both the Smart Dispatch Client and Smart Dispatch Gateway access the Smart Dispatch Server via this port. For details, see “8.1 Basic Settings” and “9.1 Basic Settings” .
17000	Indicates the VOIP start port of the Smart Dispatch Server for audio communication. Up to 400 ports are reserved for audio communication. For example, if the start port number is 17000, the port range will be 17000–17399. For details, see “8.1 Basic Settings” .

Port	Description
19000	<p>Indicates the VOIP start port of the Smart Dispatch Gateway for audio communication. The system will reserve sufficient ports for audio communication. When the Smart Dispatch Gateway is connected to dispatch stations, the number of the reserved ports is twice that of the dispatch stations. For example, if the Smart Dispatch Gateway connects three dispatch stations and the start port number is 19000, the reserved port numbers will be 19000 – 19005. However, if the Smart Dispatch Gateway connects to the repeater, the number of the reserved ports is fourfold that of the repeaters.</p> <p>For details, see “9.1 Basic Settings”.</p>
5060	<p>Indicates the local port of the Smart Dispatch Server for telephone access.</p> <p>For details, see “8.4 SIP Settings”.</p>
Dispatch Station	
3002	<p>Indicates the Radio Registration Service (RRS) port number.</p> <p>Do keep this value when programming the dispatch station.</p>
3003	<p>Indicates the number of the Global Position System (GPS) port for GPS data exchanging between radios in the IP Multi-site Connect network.</p> <p>Do keep this value when programming the dispatch station.</p>
3004	<p>Indicates the message port in the IP Multi-site network for the radios to send and receive short messages.</p> <p>Do keep this value when programming the dispatch station.</p>
3005	<p>Indicates the call control port in the IP Multi-site network. If the portable radio and the dispatch station need to realize the same function, their port numbers must be consistent. Otherwise, they must be different.</p> <p>Do keep this value when programming the dispatch station.</p>
Repeater	
30001	Slot 1 RRS (Radio Registration Service) Port
30002	Slot 2 RRS Port
30003	Slot 1 LP (Location Protocol) Port

Port	Description
30004	Slot 2 LP Port
30005	Slot 1 TP (Telemetry Protocol) Port
30006	Slot 2 TP Port
30007	Slot 1 TM (Text Message) Port
30008	Slot 2 TM Port
30009	Slot 1 RCP (Radio Control Protocol) Port
30010	Slot 2 RCP Port
30012	Slot 1 RTP (Real-time Transport Protocol) Port
30014	Slot 2 RTP Port
30015	Analog Channel RCP Port
30016	Analog Channel RTP Port

4. Pre-configuration Tasks

It is required to check the database and hardware components first before configuration.

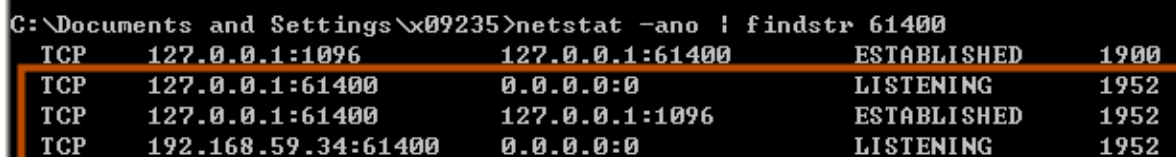
4.1 Checking the IP Address

To check whether the IP address assigned to the dispatch station is available, open the command window and run the “PING” command.

4.2 Checking the Port

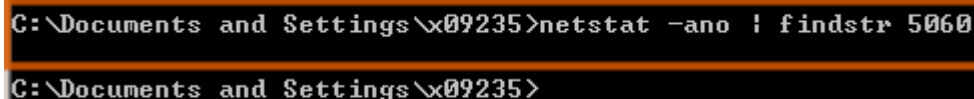
To check the port utilization, open the command window and run the `netstat -ano | findstr <port>` command. If the port is occupied, it is required to change the default port via the configuration tool.

- If the port is occupied, relevant records will appear as shown in the following figure.



```
C:\Documents and Settings\X09235>netstat -ano | findstr 61400
TCP    127.0.0.1:1096      127.0.0.1:61400    ESTABLISHED    1900
TCP    127.0.0.1:61400    0.0.0.0:0          LISTENING      1952
TCP    127.0.0.1:61400    127.0.0.1:1096     ESTABLISHED    1952
TCP    192.168.59.34:61400 0.0.0.0:0          LISTENING      1952
```

- If the port is available, there is no record as shown in the following figure.



```
C:\Documents and Settings\X09235>netstat -ano | findstr 5060
C:\Documents and Settings\X09235>
```



Note

To open a command window, go to “Start -> Run”, and type “cmd” into the text box, finally press Enter.

4.3 Checking the Dispatch Station, Repeater and Portable Radio

Check whether the dispatch station and portable radio have sufficient battery strength, and whether the firmware version of the dispatch station, repeater and portable radio meets the following requirements.

- Dispatch station: V6.05.xx.xxx or later.
- Repeater: V7.00.xx.xxx or later.
- Portable radio: V5.05.xx.xxx or later.

Here, “x” indicates the detailed version number.

4.4 Testing the Sound Card

Test the sound card in the computer on which you want to install the Smart Dispatch Gateway and Smart Dispatch Client.

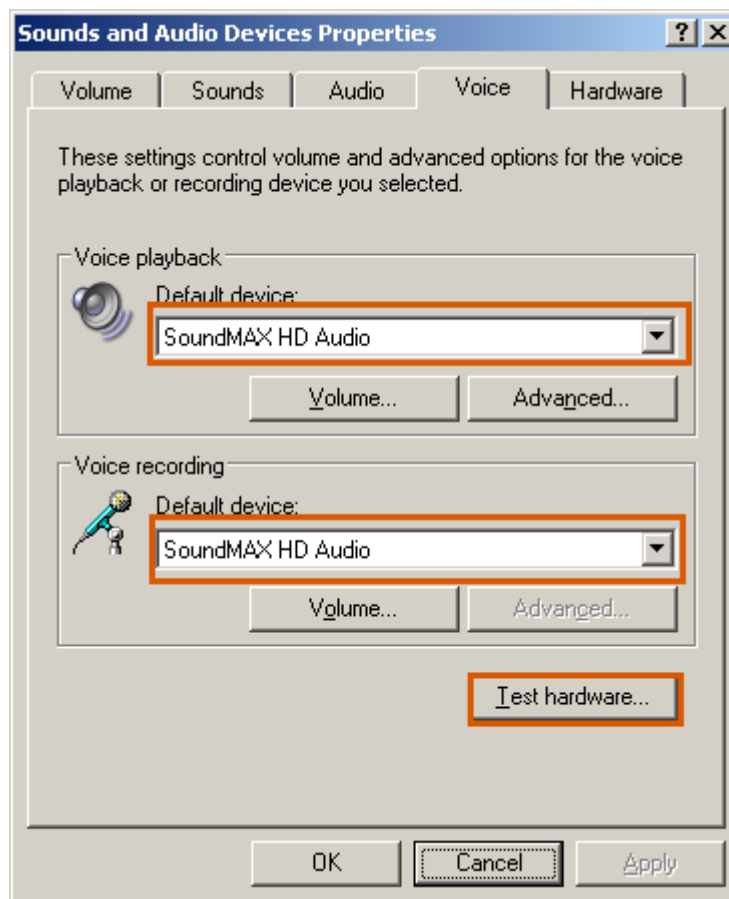
Caution

Be sure to connect the microphone and speaker to the computer properly before test.

4.4.1 Testing the Sound Card in Windows XP

Step 1 Go to “Start -> Control Panel -> Sound and Audio Device -> Voice”.

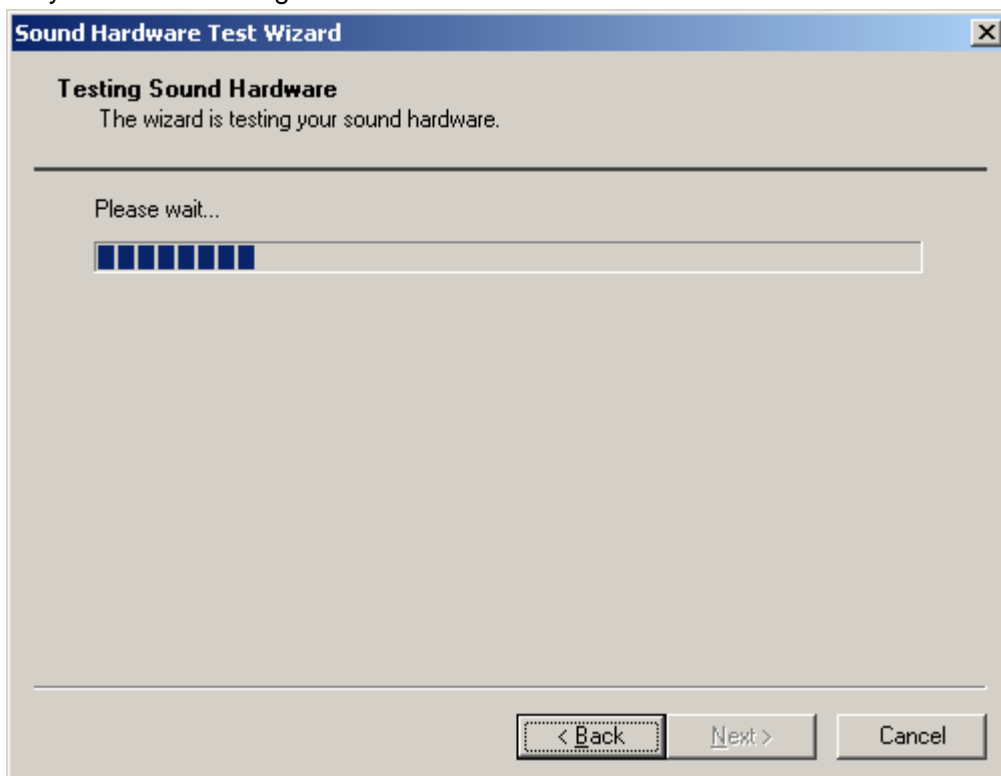
Step 2 Select the default device from the drop-down list under the “Voice playback” and “Voice recording”, and then click “Test hardware...”.



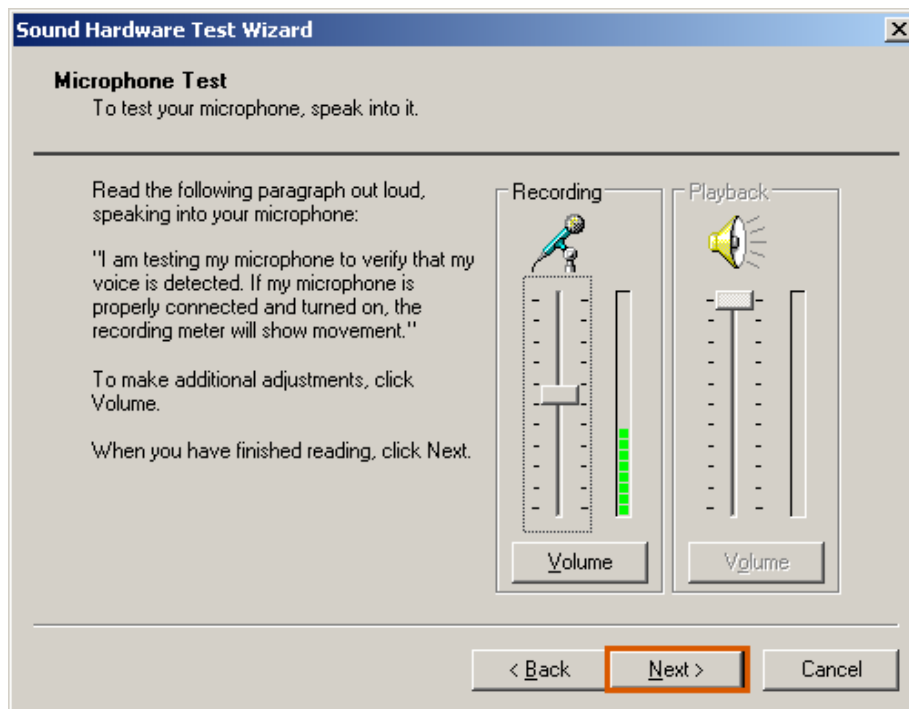
Step 3 Click “Next”.



The system starts testing the sound hardware.

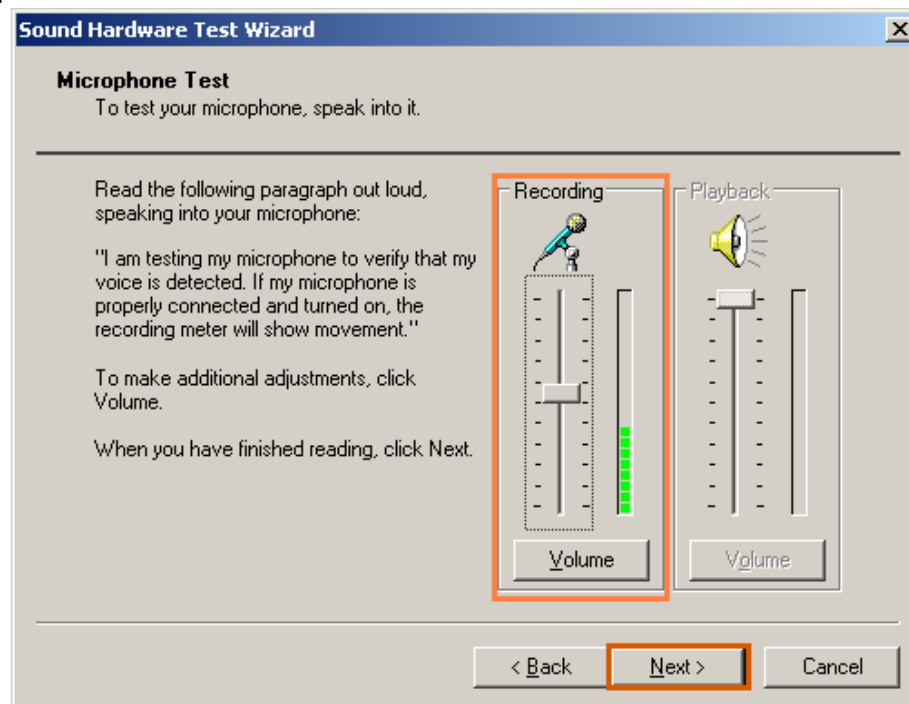


The following interface will appear after the test is finished.



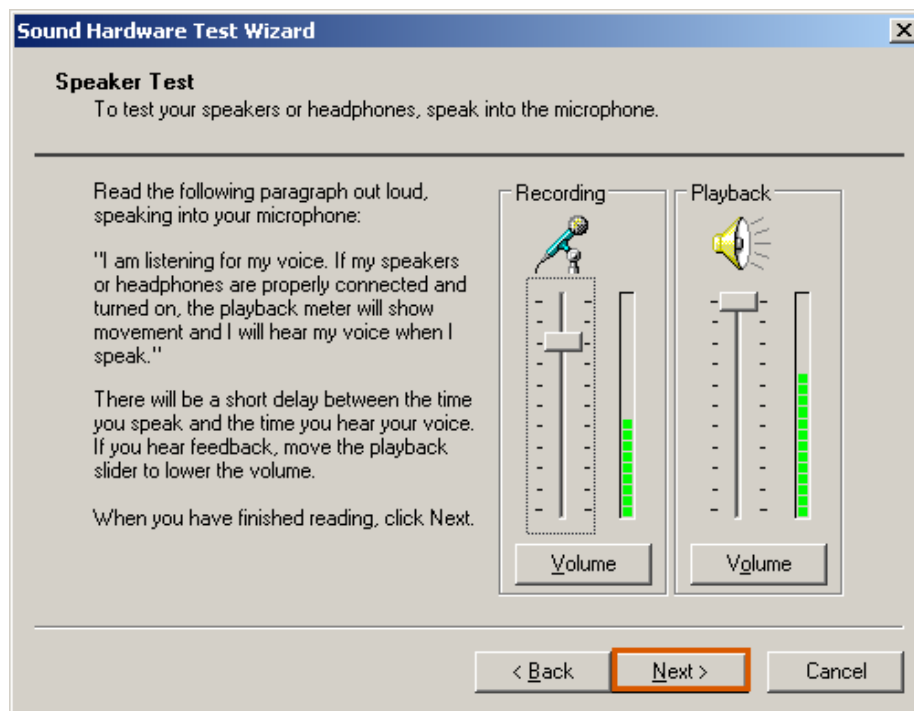
Step 4 Check the microphone. Speak into the microphone and observe whether the “Recording” meter will show movement.

If yes, it indicates that the microphone works properly. Otherwise, you need to replace the microphone.



Step 5 Click “Next”.

Step 6 Check the speaker. Speak into the microphone. If the speaker works properly, the “Playback” meter will show movement.



Step 7 Click “Next” and the test result appears. Then click “Finish” to complete the sound card test.



4.4.2 Testing the Sound Card in Windows 7

Be sure to connect the microphone and speaker to the computer properly before test. In Windows 7, you

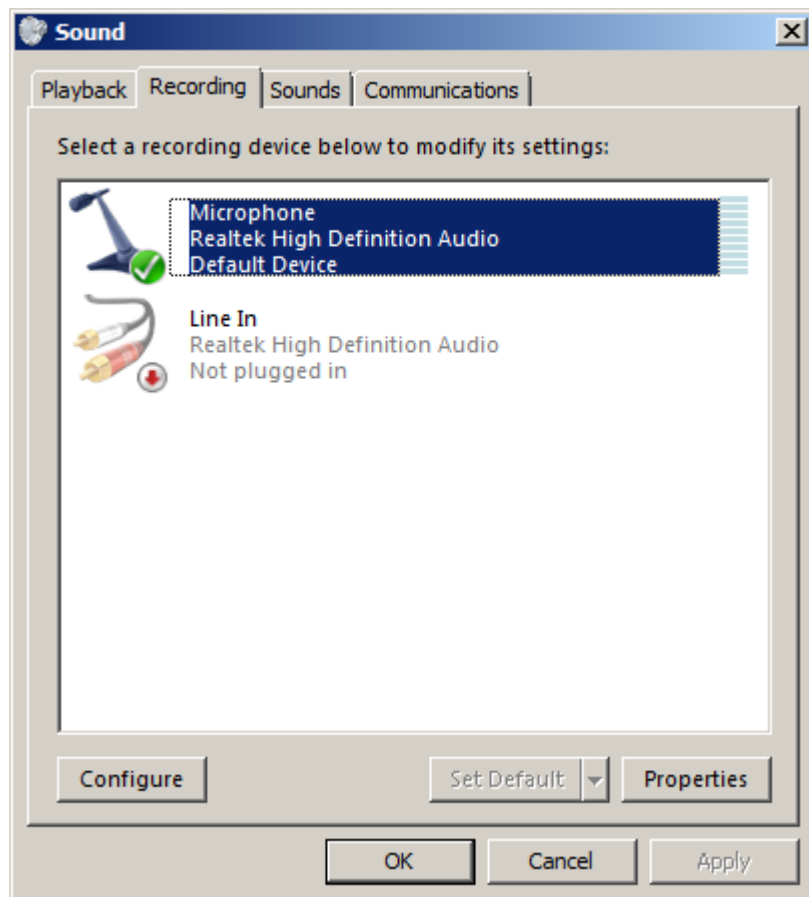
should test the microphone and speaker respectively.

Testing the microphone

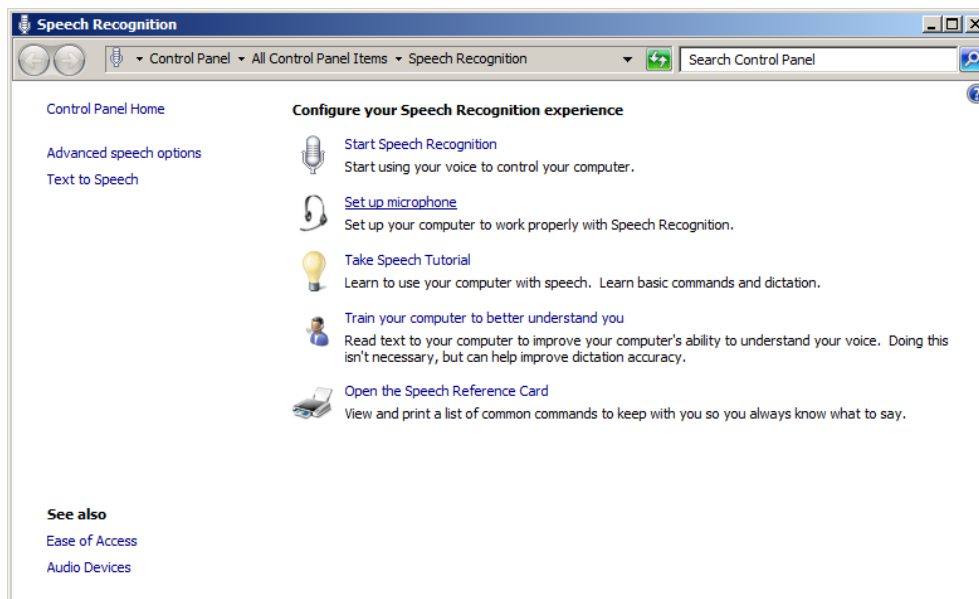
Step 1 Right-click the sound icon on the taskbar and select “Sounds”.

Step 2 Select the “Recording” tab in the “Sound” window.

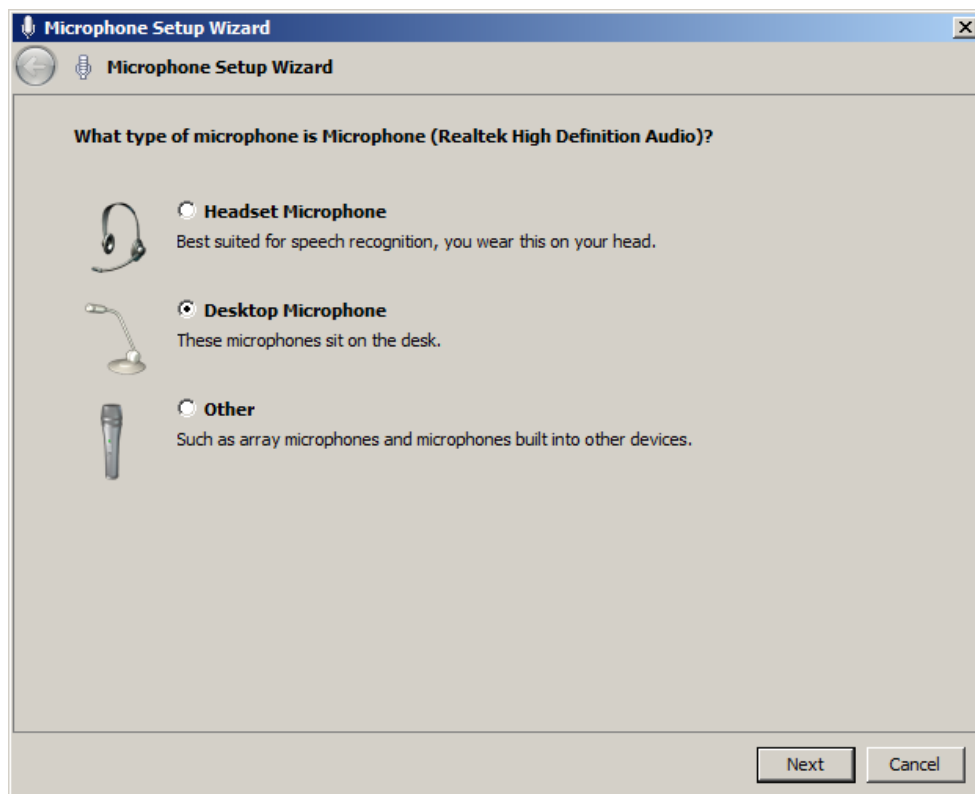
Step 3 Select “Microphone” and click “Configure”.



Step 4 Click “Set up Microphone”.



Step 5 Select the microphone type (e.g. Desktop Microphone) and click “Next”.

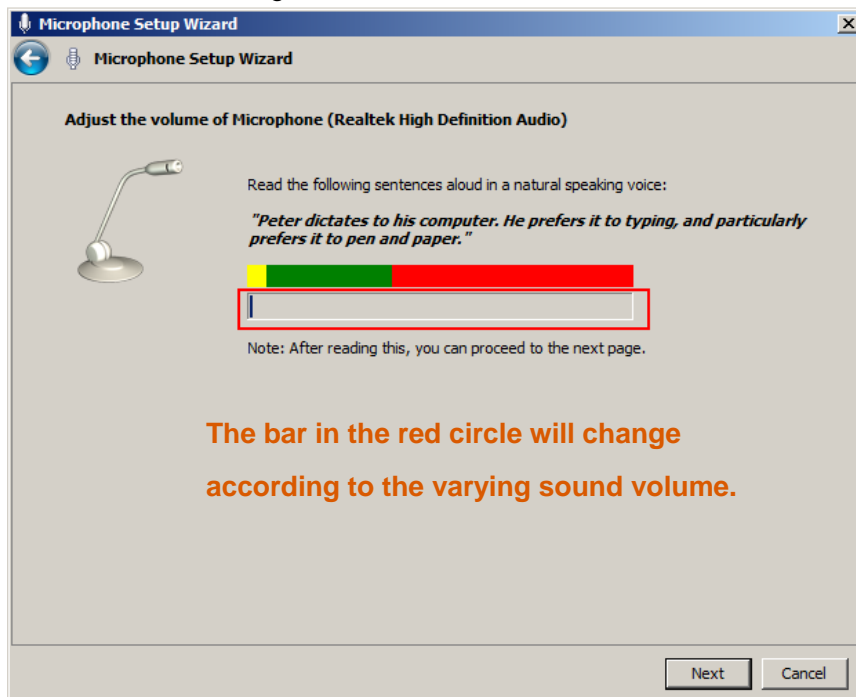


Step 6 Click “Next”.

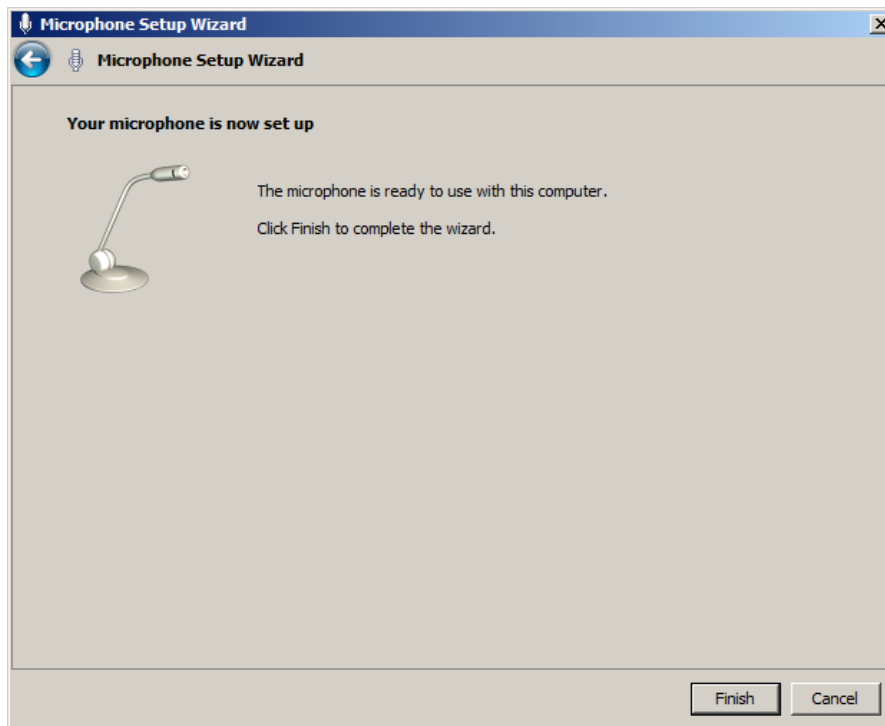


Step 7 Speak into the microphone. If the microphone works properly, the progress bar will change accordingly. Then click “Next”.

If the microphone does not work properly, please update the driver program or replace your microphone, and then test it again.

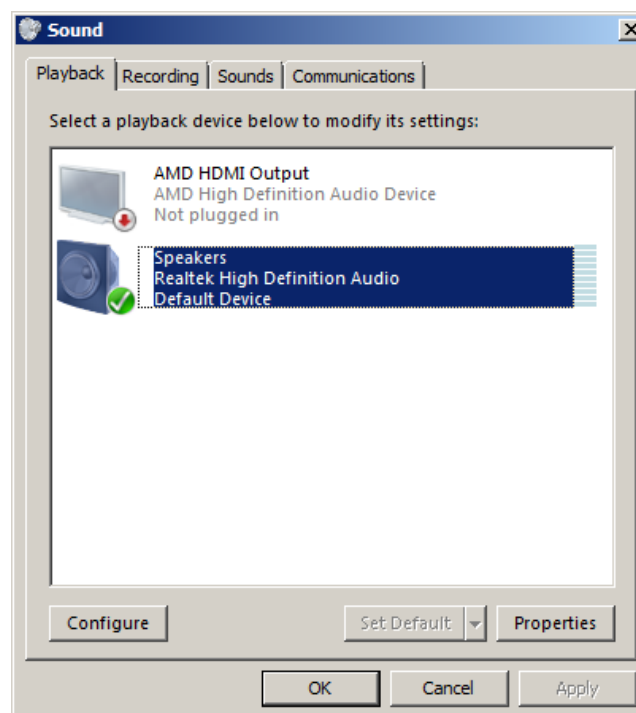


Step 8 Click “Finish”.



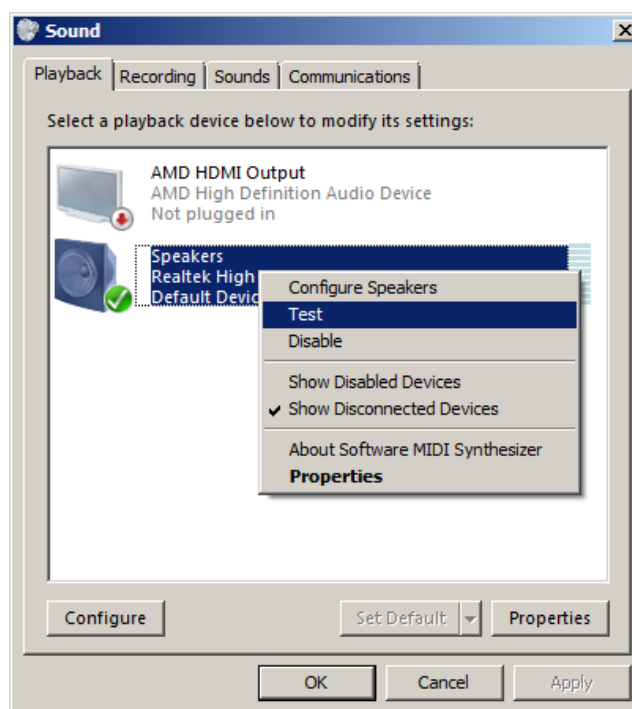
Testing the speaker

Step 1 Select the “Playback” tab in the “Sound” window.



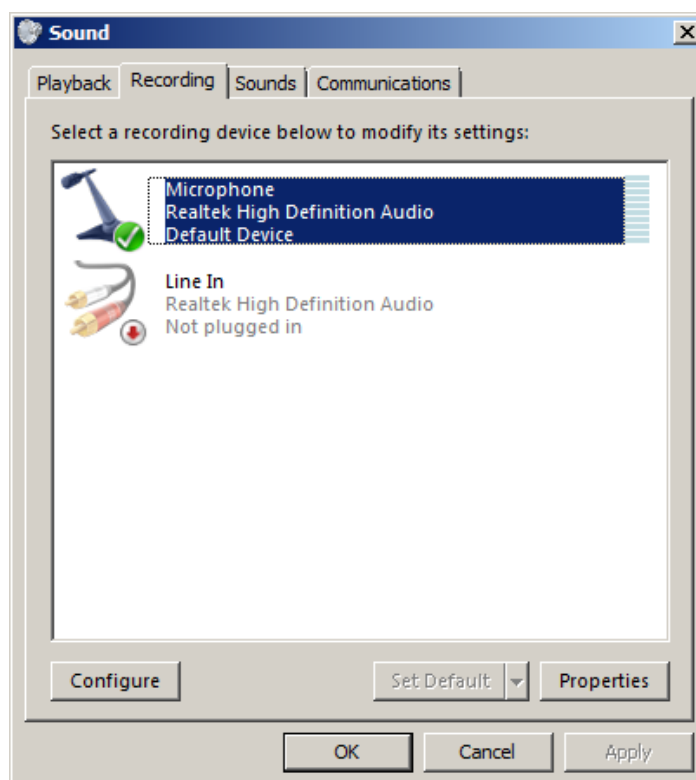
Step 2 Right-click “Speakers” and select “Test”.

If you can hear the sound, it indicates the speaker is ready for use.

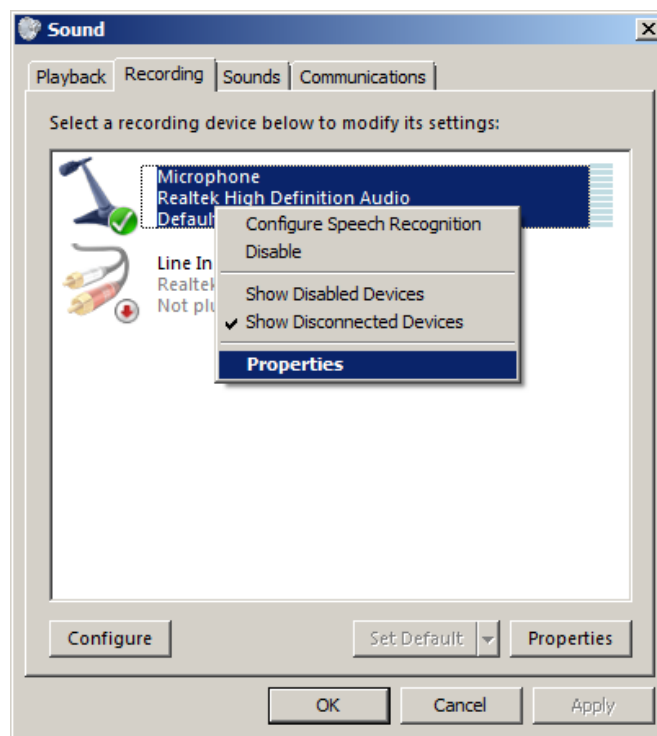


Testing the recording

Step 1 Select the “Recording” tab in the “Sound” window.



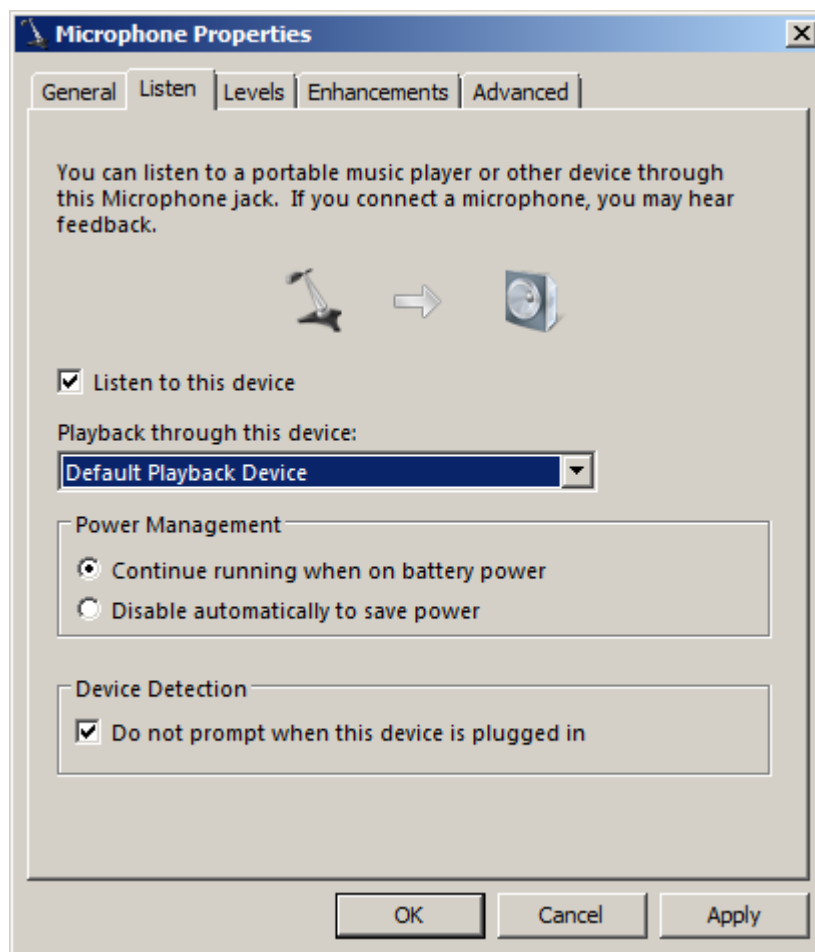
Step 2 Right-click “Microphone” and select “Properties”.



Step 3 Select the “Listen” tab and select “Listen to this device”, and then select the device from the drop-down list under “Playback through this device”.

⚠ Caution

This step is intended to test the recording only. In general, do not select the option “Listen to this device”.



Step 4 Speak into the microphone.

If the microphone works properly, you will hear the sound and the volume indicator changes accordingly.

Step 5 Click “OK” to finish.

4.5 Configuring the Multi-channel Sound Card

4.5.1 Installing the Multi-channel Sound Card

Step 1 Insert the multi-channel sound card into the PCI slot of the computer.

Step 2 Install the driver program.

4.5.2 Connecting the Cable

You can see the “In” or “Out” label on the connectors of the cable. Make sure that the connectors labeled “In” are connected to the microphone and those labeled “Out” are connected to the earpiece or speaker.

Step 1 Insert the connectors labeled “IN7↓” and “IN8↓” into the matching jacks on the breakout cable.



Step 2 Plug the other end of the breakout cable into the microphone jack of the dispatch station.

Step 3 Insert the connectors labeled “OUT7↑” and “OUT8↑” into the matching jacks on the breakout cable.



Step 4 Plug the other end of the breakout cable into the speaker jack of the dispatch station. See the connection as follows.



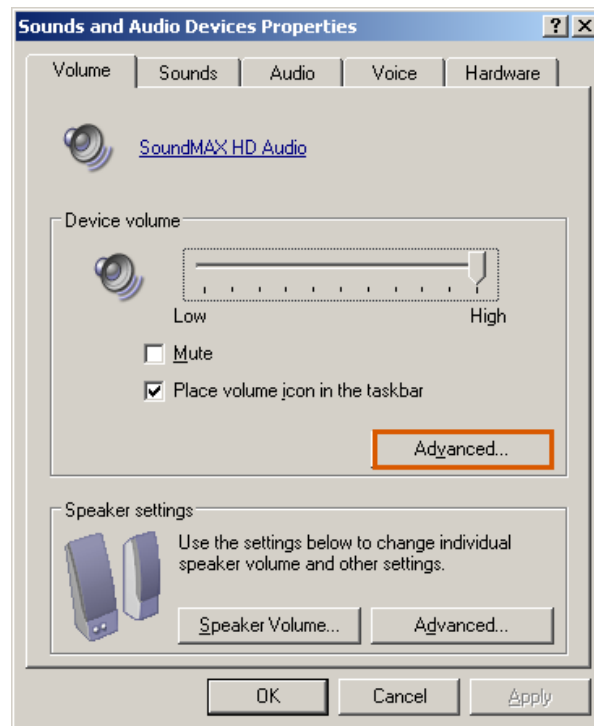
4.6 Instructions

4.6.1 Operations in Windows XP

You need to deactivate the microphone boost feature in Windows XP. To do so, follow the steps below:

Step 1 Go to “Start -> Control Panel -> Sound and Audio Device -> Voice”.

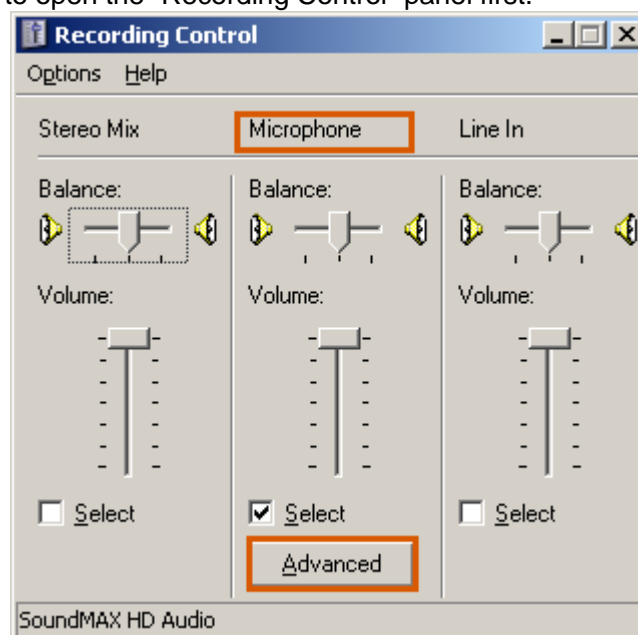
Step 2 Click the “Volume” tab and click “Advanced” in the “Device volume” box.



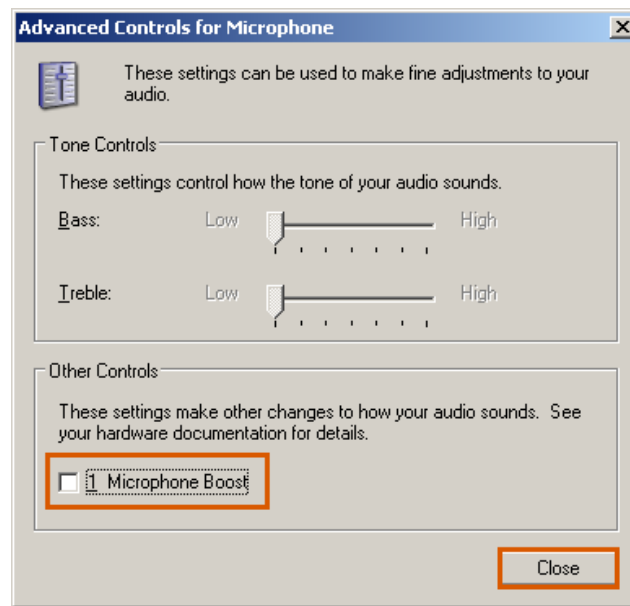
Step 3 Open the “Recording Control” panel and click “Advanced”.



Note
It is required to open the “Recording Control” panel first.



Step 4 Clear the check box labeled “1 Microphone Boot” and click “Close”.

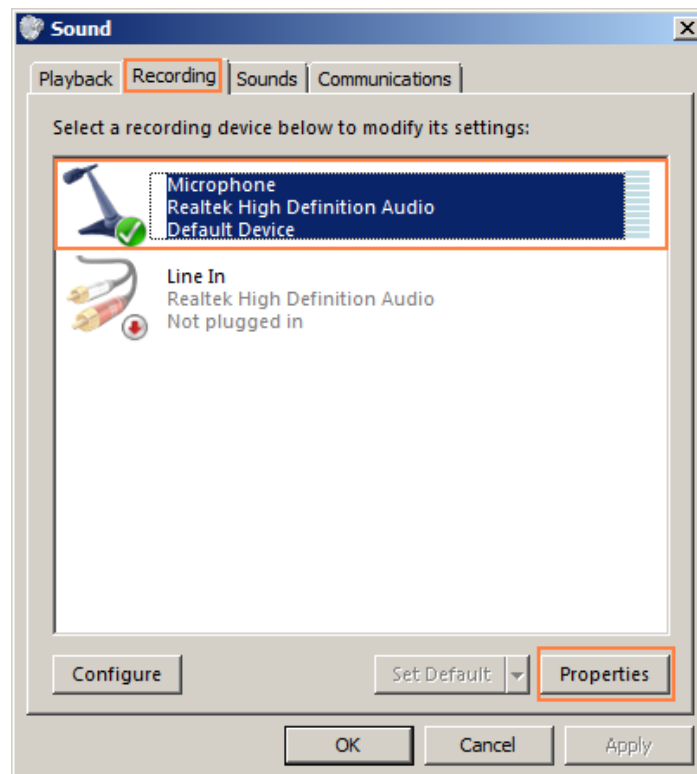


4.6.2 Operations in Windows 7

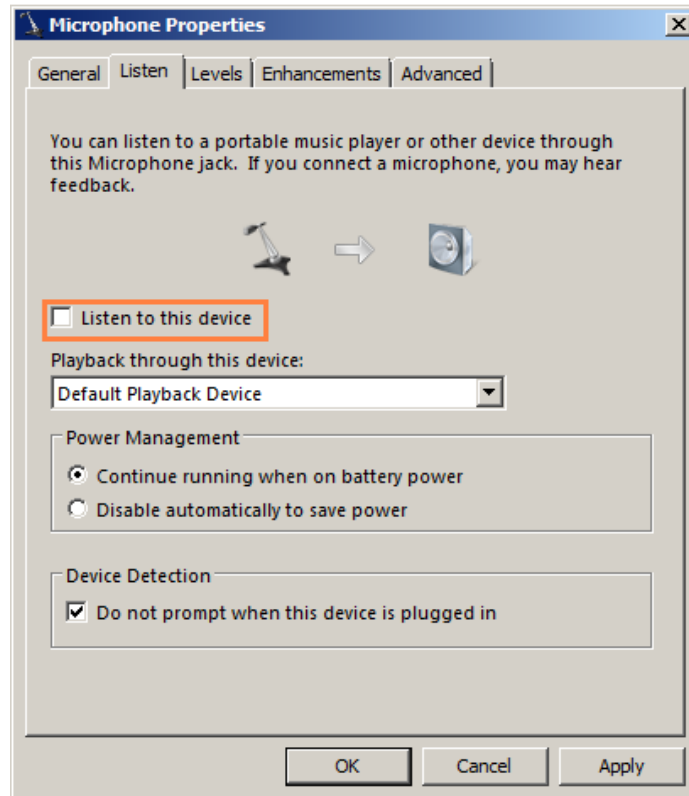
In Windows 7, you need to deactivate the listening feature, set the “Enhancement” of the microphone to “0” in “Microphone Properties” and “Speaker Properties”. To do this, follow the steps below:

Step 1 Right-click the sound icon on the taskbar and select “Sounds”.

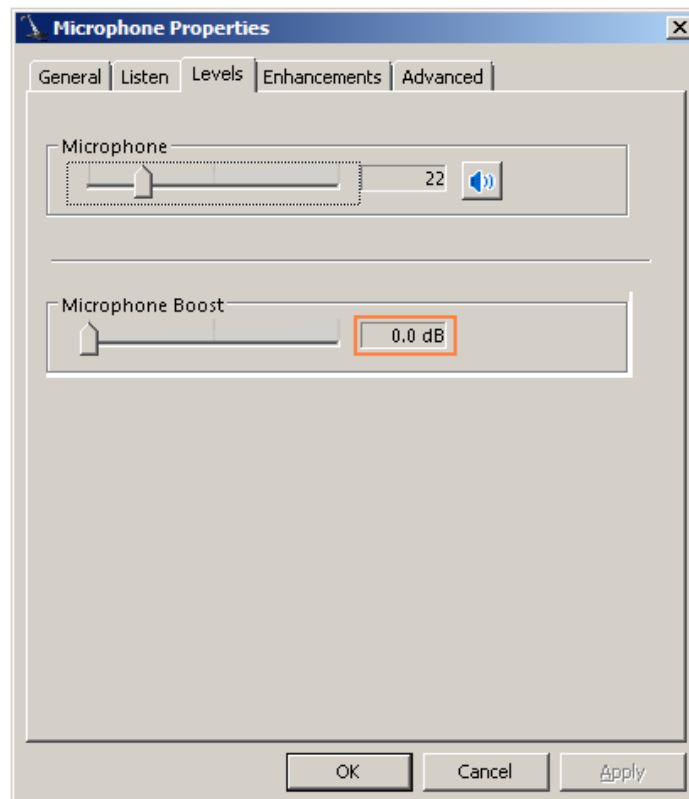
Step 2 Select the “Recording” tab in the “Sound” dialog box. Then select “Microphone” and click “Properties”.



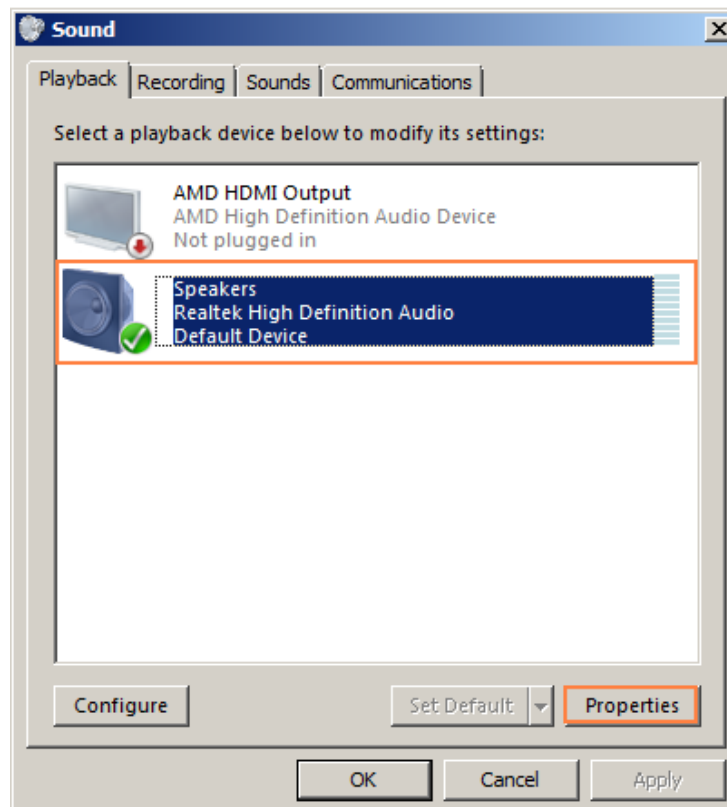
Step 3 Clear the check box labeled “Listen to this device” and click “OK”.



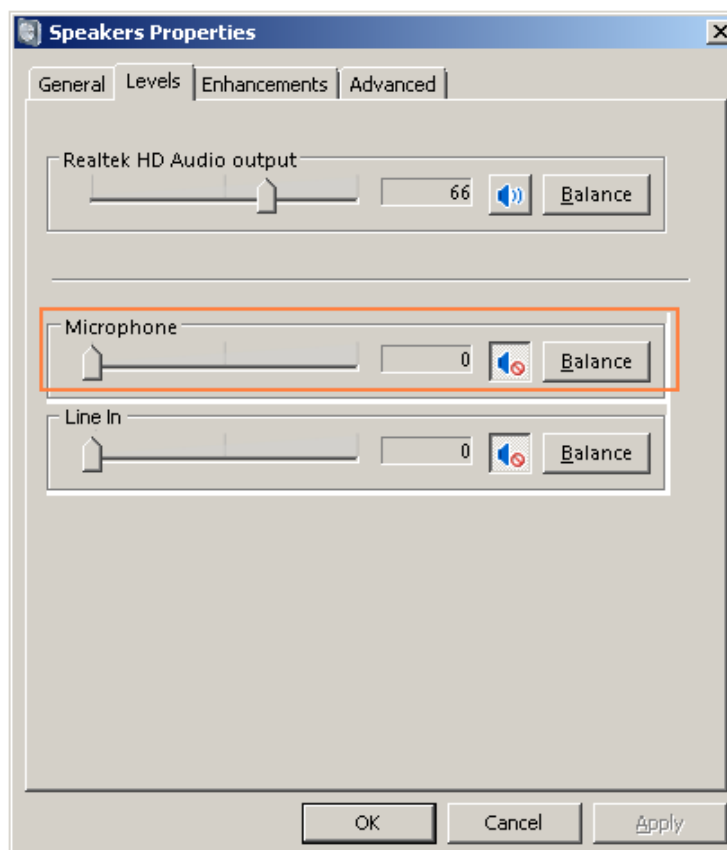
Step 4 Click the “Enhancements” tab, then set “Microphone Boost” to “0.0 dB” and click “OK”.



Step 5 Click the “Playback” tab and select “Speakers”, and then click “Properties”.



Step 6 Click the “Enhancements” tab, then set “Microphone” to “0” and click “OK”.




5. Programming the Dispatch Station

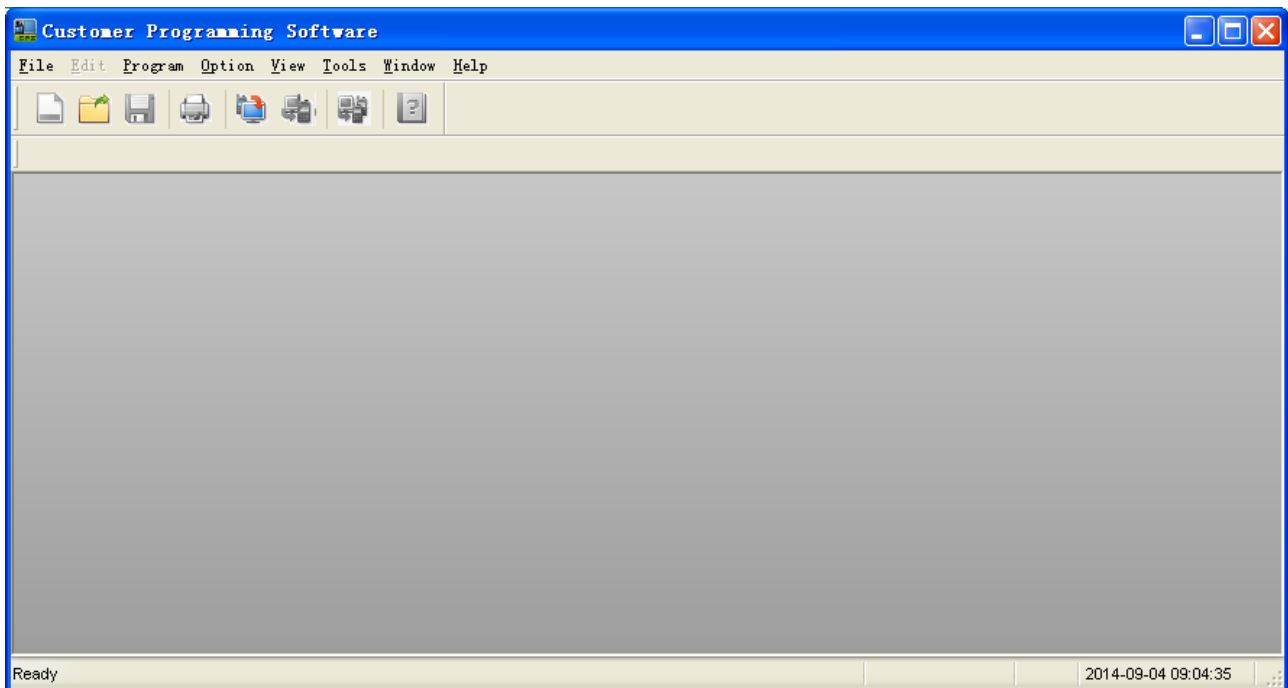
Caution

- Read the data from the dispatch station and the portable radio before programming.
- It is recommended to deploy two dispatch stations in a group to transmit the audio signals and GPS data separately, so that the GPS data reception will not be affected. In this case, these dispatch stations must share the same ID.
- The firmware version of the dispatch stations must be V6.05.xx.xxx or later. Here, “x” indicates the detailed version number.

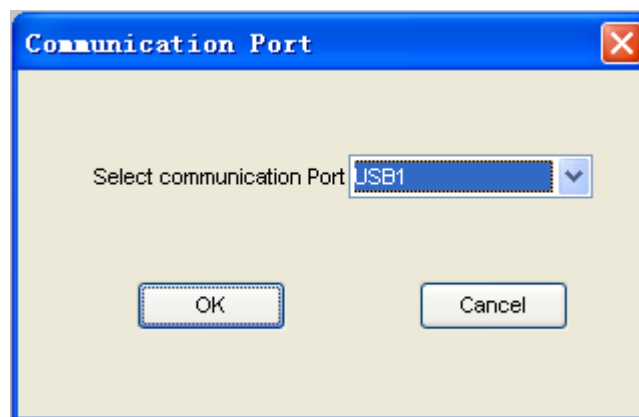
5.1 Basic Settings

Step 1 Open the Customer Programming Software (CPS).

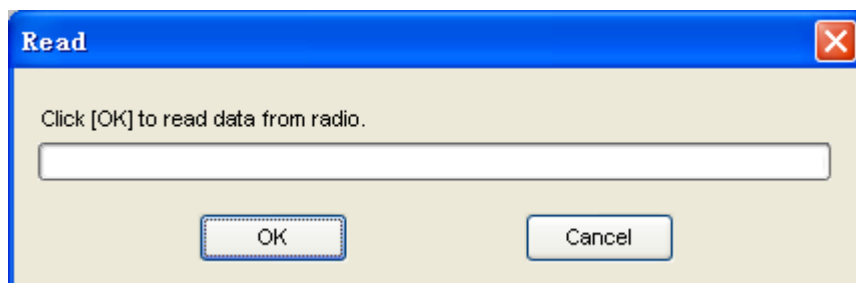
Step 2 Click the icon  in the toolbar to read the data from the dispatch station.



Step 3 Click the "OK" button to enter the following dialog box.



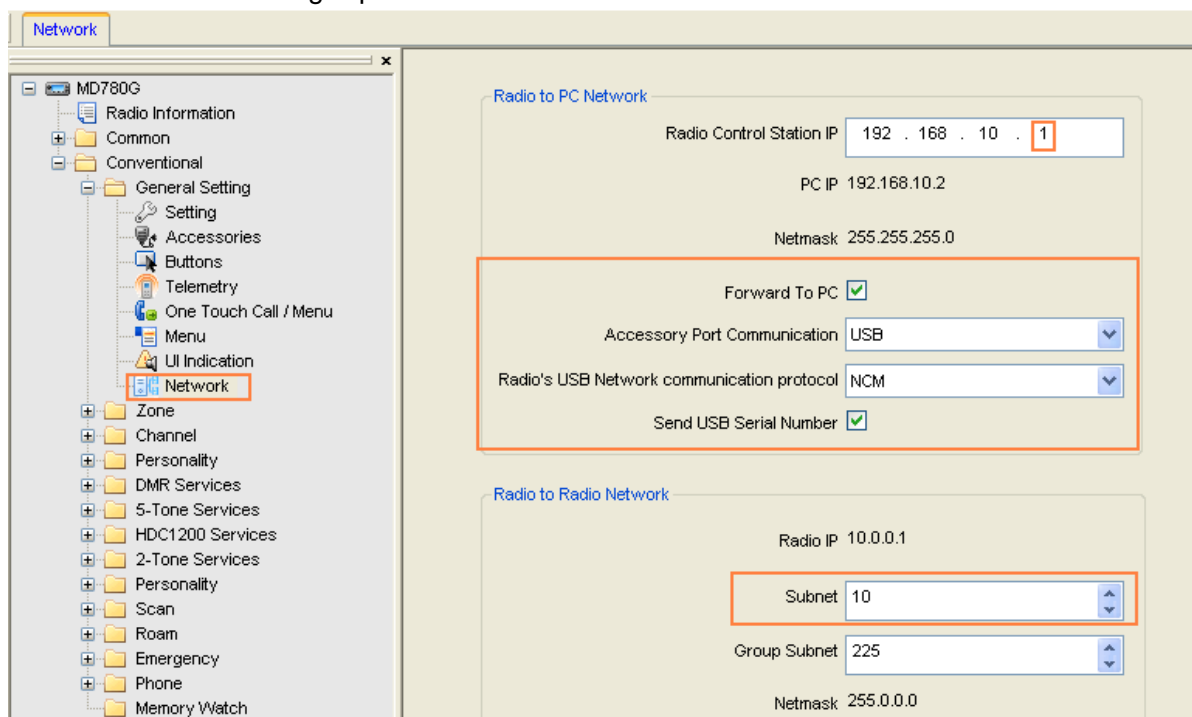
Step 4 Click "OK" to start reading the data from the dispatch station. After the data is read successfully, click "OK" in the following dialog box.




Step 5 Go to "Conventional -> General Setting -> Network" in the left navigation tree.

Step 6 Set the following parameters.

Do follow the settings specified in the table below.



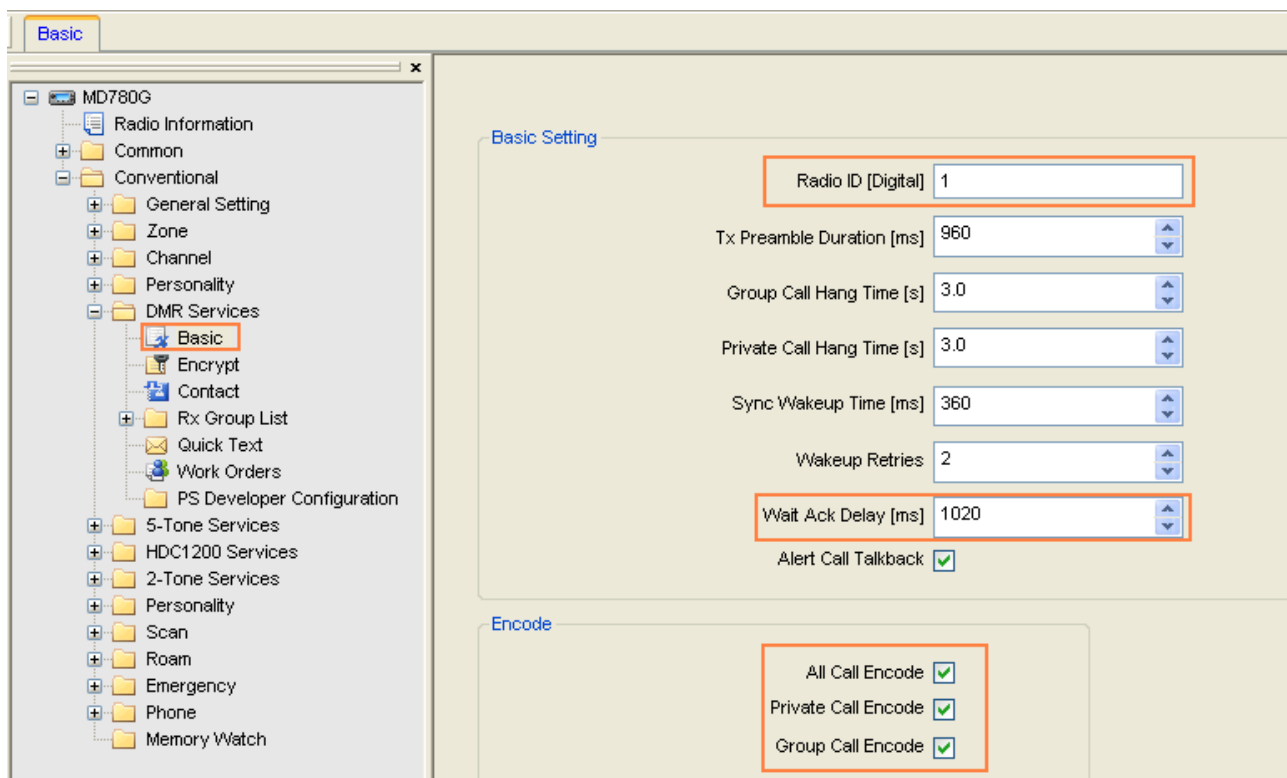
Parameter	Settings
Radio Control Station IP	The fourth section must be set to "1". It is highly recommended to set this IP to "192.168. Subnet .1".
Forward To PC	Be sure to select this option.
Accessory Port Communication	Select "USB" from the drop-down list.
Radio's USB Network communication protocol	Select "NCM" from the drop-down list.
Send USB Serial Number	Be sure to select this option.
Subnet	<p>This parameter defines the first field of IP address in the virtual subnet.</p> <p>The range is 1 - 126.</p> <p> Caution</p> <ul style="list-style-type: none"> ➤ The subnet must be different from the first section of the IP address for accessing the Smart Dispatch Gateway. For example, if the IP address of the Smart Dispatch Gateway is 10.168.24.43, the subnet must not be set to 10. Otherwise, it may cause communication failure. ➤ In the same group, you need to set the subnet of the dispatch station (for audio transmission) and the dispatch station (for GPS data transmission) to be different.

5.2 DMR Service Settings

Step 1 Go to "Conventional -> DMR Services -> Basic".

Step 2 Set the following parameters.

Do follow the settings specified in the table below.



Parameter	Settings
Radio ID [Digital]	Sets the identity of the dispatch station. It must be unique. The range is 1 – 16776415.
Wait Ack Delay [ms]	Sets the time period of waiting for an ACK after sending data or command. The value must be greater than 990.
All Call Encode	Sets whether the dispatch station is allowed to transmit the all call. Be sure to select this option, so the dispatch station will be allowed to transmit the all call.
Private Call Encode	Sets whether the dispatch station is allowed to transmit the private call. Be sure to select this option, so the dispatch station will be allowed to transmit the private call.
Group Call Encode	Sets whether the dispatch station is allowed to transmit the group call. Be sure to select this option, so the dispatch station will be allowed to transmit the group call.

5.3 Channel Settings

In any case, you must select the options: “Emergency Alarm Indication”, “Emergency Alarm Ack” and “Emergency Call Indication”.

Caution

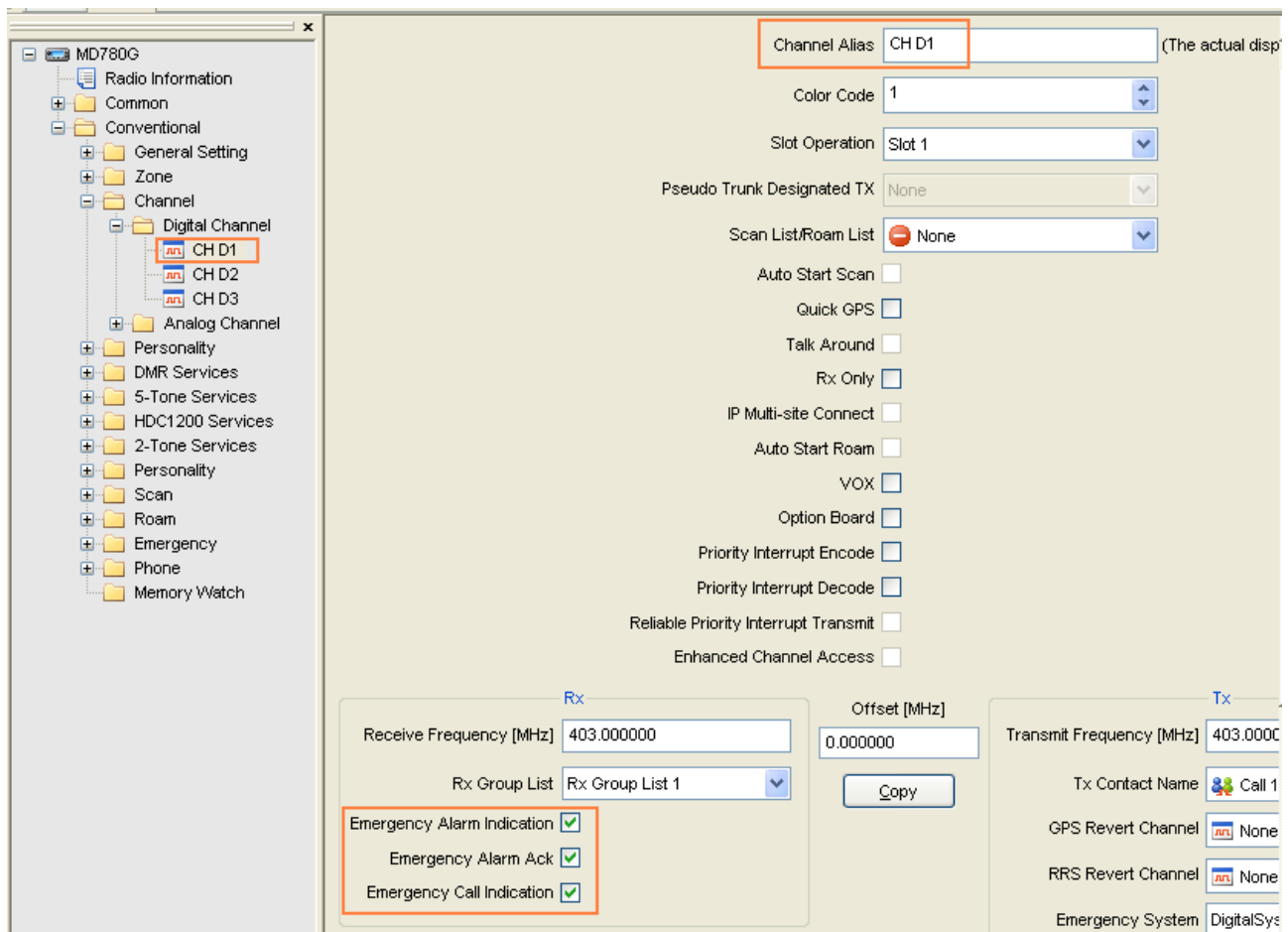
It is recommended to use different channels for GPS data and audio transmission.

One dispatch station in a group

In this case, only one dispatch station is employed to transmit both the audio signals and GPS data in a group.

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the following parameters in the orange frames.



The screenshot shows the MD780G configuration interface. The left navigation tree is expanded to 'Digital Channel' > 'CH D1'. The main configuration area has several fields and checkboxes. The following parameters are highlighted with orange boxes:

- Channel Alias:** CH D1 (The actual display name)
- Emergency Alarm Indication:** ☒
- Emergency Alarm Ack:** ☒
- Emergency Call Indication:** ☒

Other visible settings include:

- Color Code: 1
- Slot Operation: Slot 1
- Pseudo Trunk Designated TX: None
- Scan List/Roam List: None
- Auto Start Scan: ☐
- Quick GPS: ☐
- Talk Around: ☐
- Rx Only: ☐
- IP Multi-site Connect: ☐
- Auto Start Roam: ☐
- VOX: ☐
- Option Board: ☐
- Priority Interrupt Encode: ☐
- Priority Interrupt Decode: ☐
- Reliable Priority Interrupt Transmit: ☐
- Enhanced Channel Access: ☐
- Receive Frequency [MHz]: 403.000000
- Rx Group List: Rx Group List 1
- Offset [MHz]: 0.000000
- Transmit Frequency [MHz]: 403.000000
- Tx Contact Name: Call 1
- GPS Revert Channel: None
- RRS Revert Channel: None
- Emergency System: DigitalSys

Two dispatch stations in a group

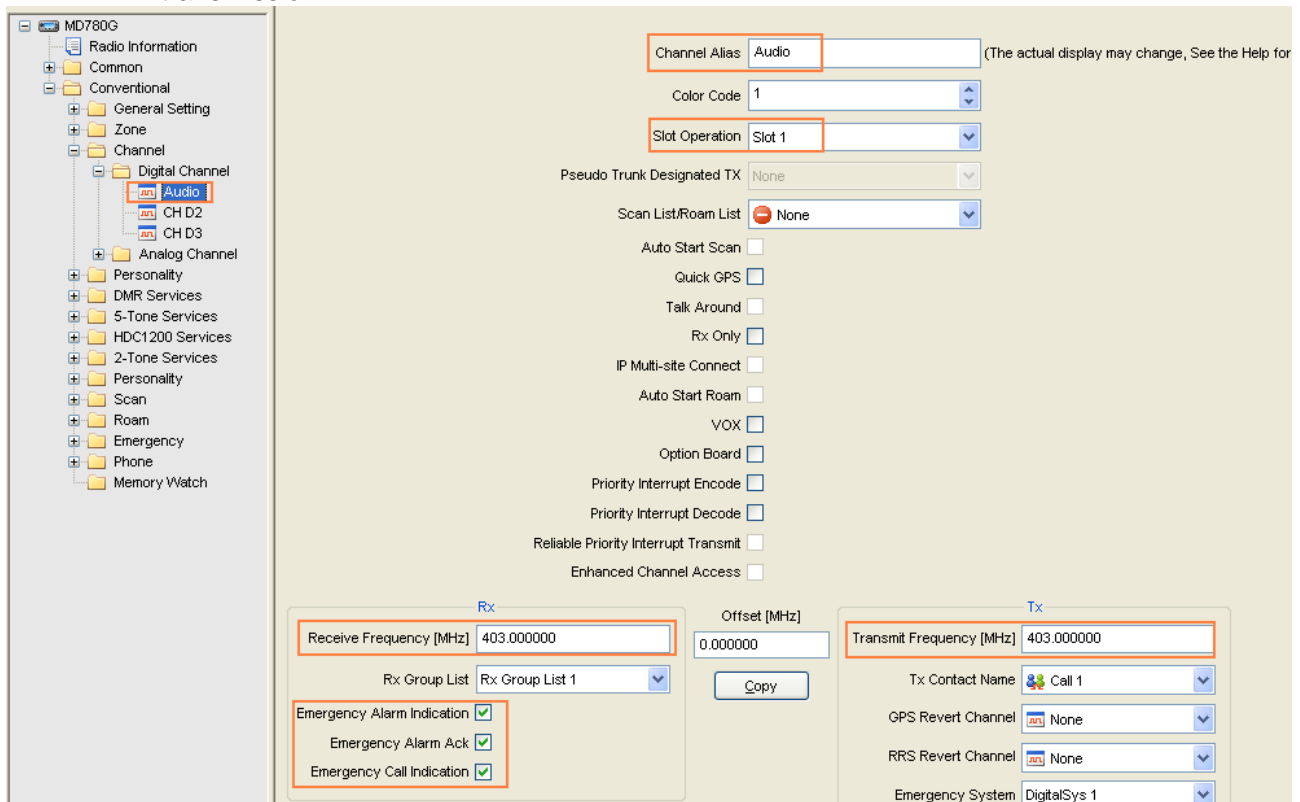
In this case, two dispatch stations are employed in a group to transmit the audio signals and GPS data separately. If these dispatch stations work at the same frequency, they must use different slots.

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the following parameters in the orange frames. Please note that the settings of the two dispatch stations will be different.

Caution

You must select the following options: “Emergency Alarm Indication”, “Emergency Alarm Ack” and “Emergency Call Indication” for the dispatch station used for audio signal transmission.



The screenshot displays the MD780G configuration interface. On the left, the navigation tree shows the path: Radio Information > Common > Conventional > General Setting > Zone > Channel > Digital Channel > Audio. The 'Audio' channel is selected and highlighted with an orange box. The main configuration area contains several fields and checkboxes. The 'Channel Alias' field is set to 'Audio' and is highlighted with an orange box. The 'Color Code' is set to '1'. The 'Slot Operation' is set to 'Slot 1' and is highlighted with an orange box. The 'Pseudo Trunk Designated TX' is set to 'None'. The 'Scan List/Roam List' is set to 'None'. Below these are several checkboxes: 'Auto Start Scan', 'Quick GPS', 'Talk Around', 'Rx Only', 'IP Multi-site Connect', 'Auto Start Roam', 'VOX', 'Option Board', 'Priority Interrupt Encode', 'Priority Interrupt Decode', 'Reliable Priority Interrupt Transmit', and 'Enhanced Channel Access'. At the bottom, there are two sections: 'Rx' and 'Tx'. The 'Rx' section has a 'Receive Frequency [MHz]' field set to '403.000000' and an 'Rx Group List' dropdown set to 'Rx Group List 1'. Below these are three checkboxes: 'Emergency Alarm Indication', 'Emergency Alarm Ack', and 'Emergency Call Indication', all of which are checked and highlighted with orange boxes. The 'Tx' section has a 'Transmit Frequency [MHz]' field set to '403.000000' and a 'Tx Contact Name' dropdown set to 'Call 1'. Below these are three dropdowns: 'GPS Revert Channel' (set to 'None'), 'RRS Revert Channel' (set to 'None'), and 'Emergency System' (set to 'DigitalSys 1').

Pseudo Trunking

If you need to use the Pseudo Trunking feature, the portable radio should enable the Pseudo Trunking feature and the dispatch station should meet the following requirements simultaneously:

- Two dispatch stations are required in the same group.
- The Pseudo Trunking feature is disabled in the dispatch station.
- Two dispatch stations must operate on different slot.

5.4 HDC1200 Service Settings

To make or receive a call with HDC1200 signaling on analog channel, you need to set the related parameters of the dispatch station to realize PTT ID decoding and select call decoding.

Step 1 Go to “Conventional -> HDC1200 Services -> HDC1200 System -> System 1” in the left navigation tree. Then set the following parameters in the orange frames.

For detailed parameter description, see *CPS HELP* embedded in the CPS.

The screenshot shows the MD780G configuration interface. On the left is a tree view with the following structure:

- MD780G
 - Radio Information
 - Common
 - Conventional
 - General Setting
 - Zone
 - Channel
 - Personality
 - DMR Services
 - 5-Tone Services
 - HDC1200 Services
 - HDC1200 System
 - System 1** (highlighted with a red box)
 - Contact
 - 2-Tone Services
 - Personality
 - Scan
 - Roam
 - Emergency
 - Phone

On the right, the 'Basic' tab is active, showing the following settings:

- System Alias: System 1
- Primary ID: 0001
- Group ID: 001
- PTT ID Type: Pre Only
- PTT ID Reset Time: 3
- PTT ID Decode: ☒ (highlighted with a red box)

Below the 'Basic' tab is the 'Advanced' tab, showing the following settings:

- Pretime [ms]: 500
- Preamble Bit Sync: 5
- Limited Patience Timer [s]: Disable

The 'Select Call' dialog box contains the following settings:

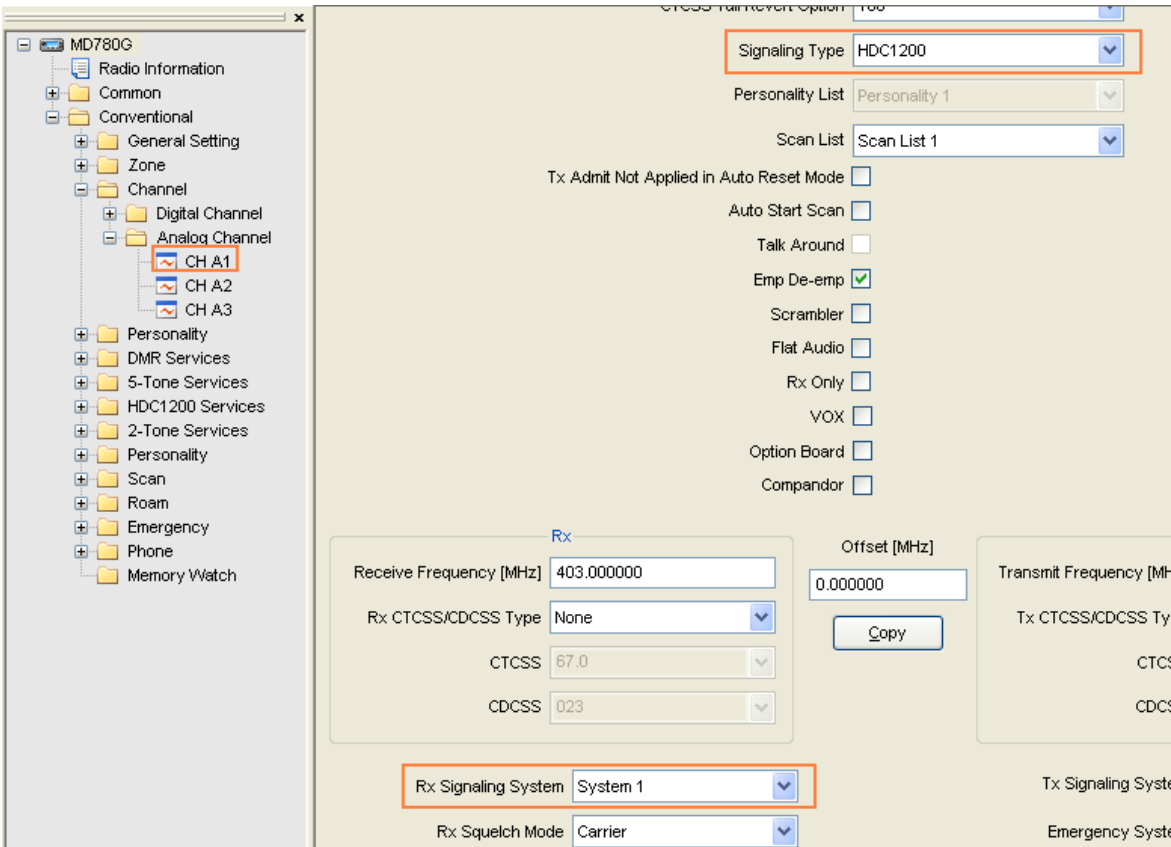
- Select Call Encode: ☒
- Select Call Decode: ☒ (highlighted with a red box)

Note

The options in "Select Call" are selected by default. Leave them at their default settings. These options are available for users who are authorized to view the developer version of the CPS, such as our engineers, technicians, etc.

Step 2 Go to "Conventional -> Channel -> Analog Channel" and select the channel to achieve calls with HDC1200 signaling, and set the following parameters.

For detailed parameter description, see *CPS HELP* embedded in the CPS.



6. Programming the Repeater

Caution

The version of the repeater must be V7.00.xx.xxx or later. Here, "x" indicates the detailed version number.

6.1 Single Site Mode

● General Setting

In the Single Site mode, the repeater only works in the local mode. It is required to connect the repeater to the Smart Dispatch Gateway.

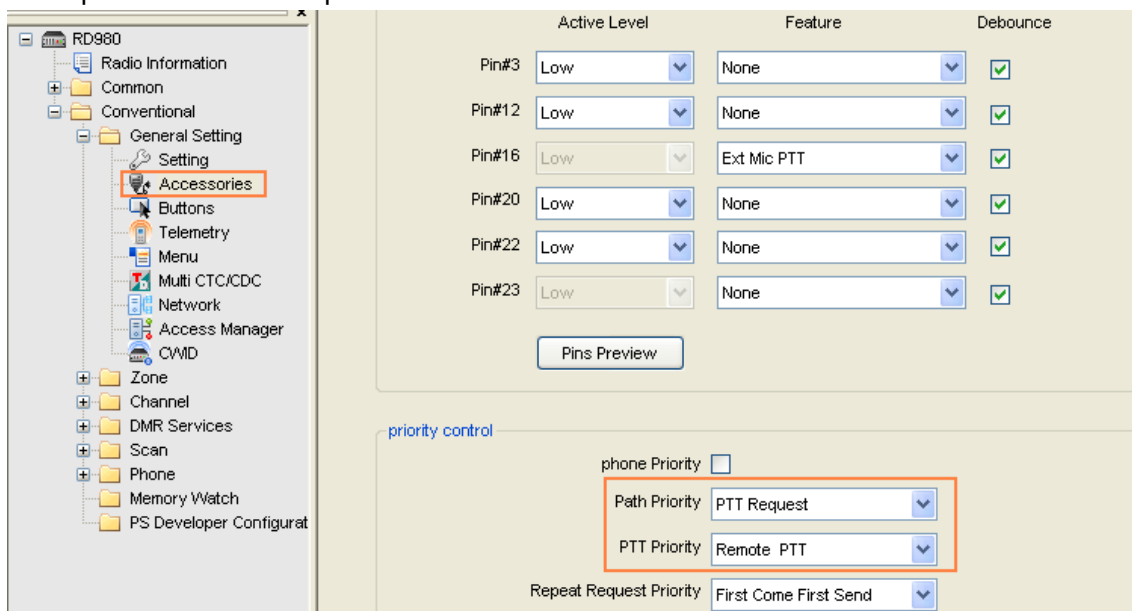
Step 1 Open the CPS and read the configuration from the repeater.

For detailed reading operations, see Step 2 to Step 4 in “[5.1 Basic Settings](#)”.

Step 2 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

Step 3 Set the “Path Priority” to “PTT Request”, and set “PTT Priority” to “Remote PTT”.

When both the repeat request and PTT request come simultaneously, the repeater will first respond to the PTT request.



Step 4 Go to “Conventional -> General Setting -> Network” in the left navigation tree, and set the following parameters.

Basic Setting

DHCP ☐

Ethernet IP 192 . 168 . 1 . 108

Gateway IP 192 . 168 . 1 . 1

Netmask 255 . 255 . 255 . 0

Manual Set DNS On/Off ☒

DNS Server IP 0 . 0 . 0 . 0

MAC Address 64 69 BC 04 02 79

IP Multi-site Connect

Repeater Type Single Site

Jitter Buffer Length 1

Network Authentication Key 00000000000000000000000000000000

Application Programming Interface

Third Party Connect Mode Normal

RTP Packet Buffer Length 1

Forward to PC ☒

Third Party Server IP 192 . 168 . 1 . 51

Parameter	Description
Basic Setting	
Ethernet IP	Sets the IP address of the repeater.
MAC Address	Sets the address of the repeater in the network. It must be unique. Make sure that each value in each part is different.
IP Multi-site Connect	
Repeater Type	If you select "Single Site" from the drop-down list, the repeater will work in the local mode rather than the IP Multi-site Connect mode.
Application Programming Interface	

Parameter	Description
Forward To PC	In the network, the repeater can forward the received data via the Ethernet to the computer, and receive and respond to the repeat request from the computer, to realize communication between Smart Dispatch and the radios.
Third Party Server IP	Sets the IP address of the Smart Dispatch Gateway.

Channel

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the channel alias, RX frequency and TX frequency.

The screenshot shows the RD980 software interface. On the left, the navigation tree is expanded to 'Digital Channel' > 'CH D1'. The main configuration area shows the following settings:

- Channel Alias: CH D1
- Color Code: 1
- Slot Operation: Slot 1
- IP Multi-site Connect: None
- Receive Frequency [MHz]: 400.075000
- Offset [MHz]: 0.000000
- Transmit Frequency [MHz]: 410.000000
- Tx Contact Name: None
- Power Level: Low

DMR Services

Step 1 Go to “Conventional -> DMR Services -> Basic”.

Step 2 Set the radio ID.

The screenshot shows the RD980 software interface with 'DMR Services' > 'Basic' selected in the navigation tree. The 'Basic Setting' panel displays the following configuration:

- Radio ID: 91
- Tx Preamble Duration [ms]: 960
- Group Call Hang Time [s]: 3.0
- Private Call Hang Time [s]: 3.0
- Emergency Call Hang Time [s]: 4.0
- SIT [s]: 6.0
- Beacon Tx Mode: Local
- Beacon Duration [ms]: Disabled

6.2 IP Multi-site Connect Mode

6.2.1 Introduction

In the IP Multi-site Connect mode, multiple repeaters in dispersed locations can be connected to exchange the audio signals and data over a TCP/IP-based network. In this way, the data will be transmitted over IP Multi-site Connect network, extending the repeater's coverage. The repeater can work in the IP Multi-site Connect mode only when you purchase the IP Multi-site Connect feature and enable it in advance.

Each IP Multi-site Connect network supports up to fifteen IP sites, including one master site and fourteen slave sites. The slave sites are managed and controlled by the master site. You must configure the Master repeater and Slave repeater respectively. The Master repeater with the static IP address is used to record the location of the Slave repeater in the network for forwarding the data.

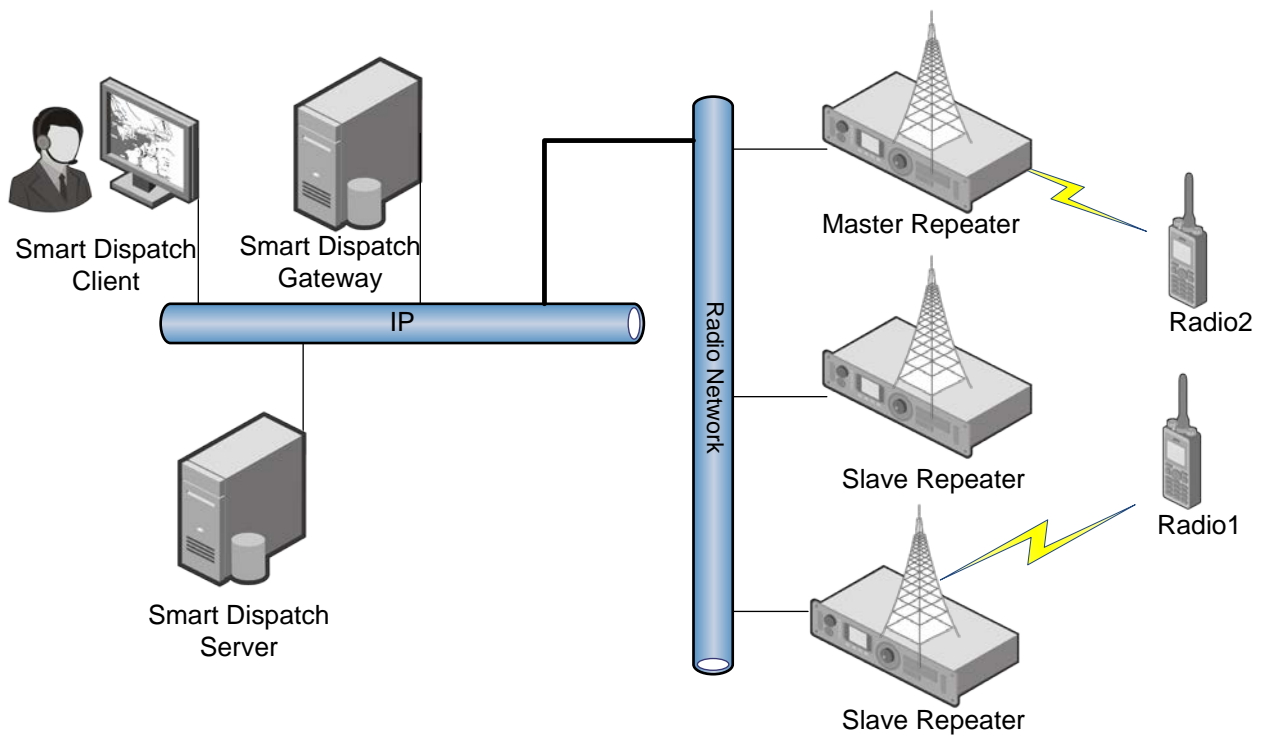
The IP Multi-site Connect feature can bring you these typical benefits:

Benefit	Example
Connecting two or more repeaters in dispersed locations	The local repeater can connect to other repeaters in dispersed locations over the IP Multi-site Connect network.
Extending the communication coverage	Multiple repeaters can be deployed in a large building to overcome obstacles like unfavorable terrain, to achieve seamless communications.
Broadcasting messages to all connected repeaters	In case of an emergency, the dispatch station can send an instruction to all repeaters in IP Multi-site Connection mode.
Connecting repeaters working in varied frequency bands	The UHF repeaters and VHF repeaters can be connected so that data and voice can be exchanged among them.
Connecting IP-based applications	In the IP Multi-site Connect mode, you can use IP-based software developed by any third party to realize more functions.

6.2.2 Normal Mode

In the Normal mode, once any repeater receives the data or command, it will transfer such data or command to other repeaters over the IP Multi-site Connect network. It is only required to connect the master repeater to the Smart Dispatch Gateway.

The system architecture is illustrated as below.



Master Repeater

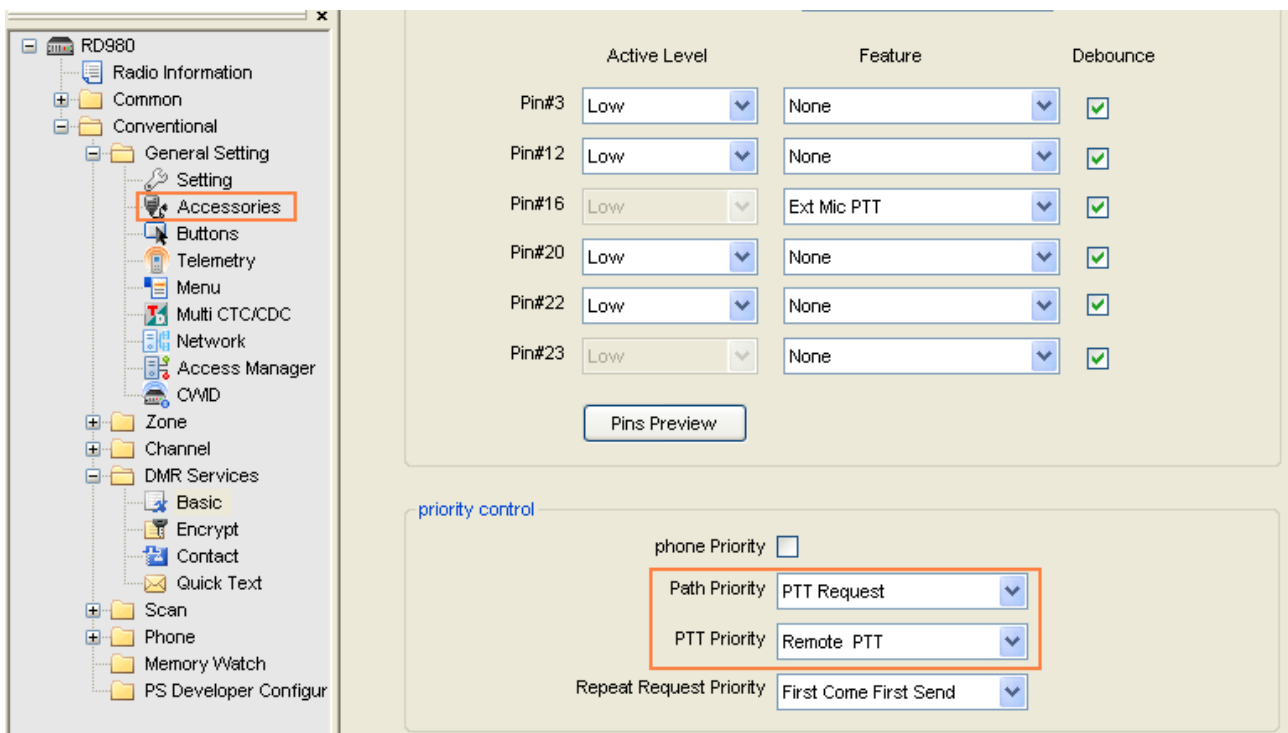
- General Setting

Step 1 Open the CPS and read the configuration from the repeater.

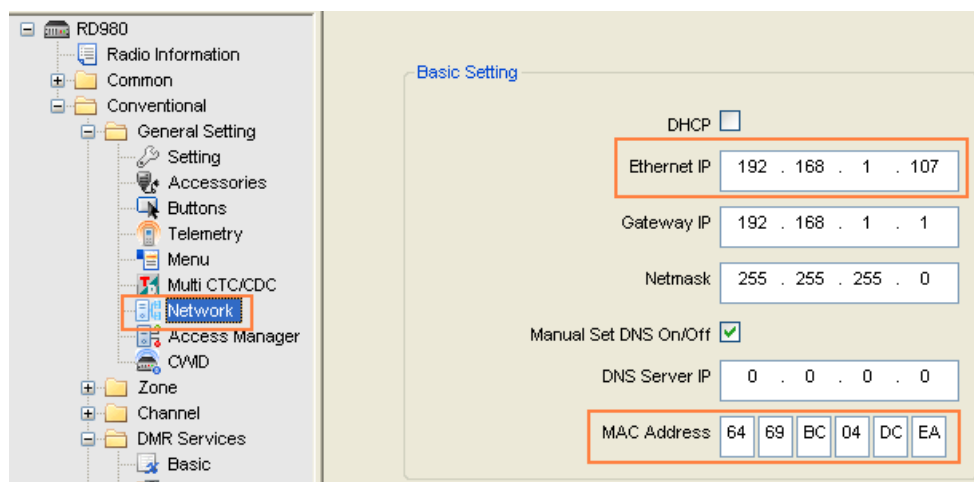
Step 2 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

Step 3 Set the “Path Priority” to “PTT Request”, and set “PTT Priority” to “Remote PTT”.

When both the repeat request and PTT request come simultaneously, the repeater will first respond to the PTT request.



Step 4 Go to “Conventional -> General Setting -> Network” in the left navigation tree, and set the parameters in the “Basic Setting” box.



Parameter	Description
DHCP	Do not select this option.
Ethernet IP	It must be unique. Otherwise, communication may be failure in the system.
Gateway IP	It must be unique. Please note that the last digit should not be set to “0”.

Parameter	Description
Netmask	255.255.255.0
MAC Address	Sets the address of the repeater in the network. It must be unique. Make sure that each value in each part is different.

Step 5 Set the parameters in the “IP Multi-site Connect” box.

Parameter	Description
Repeater Type	When this option is set to “IP Multi-site Master”, the repeater will act as the master one in the IP Multi-site Connect network.
Jitter Buffer Length	This parameter defines the length of buffer area for the repeater to process the received voice and data in the IP network. You should set this parameter based on the actual network conditions. For example, if there is a poor network connection, the value should be greater to improve the communication continuity. In the IP Multi-site Connect network, it is recommended to set this parameter to 3. The range is 1 - 8.
Network Authentication Key	Sets the password for accessing the IP Multi-site Connect network. Please note that the authentication key of the slave repeater must be identical with that of the master repeater in

Parameter	Description
	<p>the same IP Multi-site Connect network.</p> <p>If you leave this parameter blank, it indicates that no authentication is required.</p> <p>This key can contain up to 40 characters (0 - 9 and A - F).</p>
IP Multi-site Service	Be sure to select this option.

Step 6 Set the parameters in the “Application Programming Interface” box.

Application Programming Interface

Third Party Connect Mode: Normal

RTP Packet Buffer Length: 6

Forward to PC: ☒

Third Party Server IP: 183 . 16 . 105 . 225

API interface Mode: Hytera Defined Mode

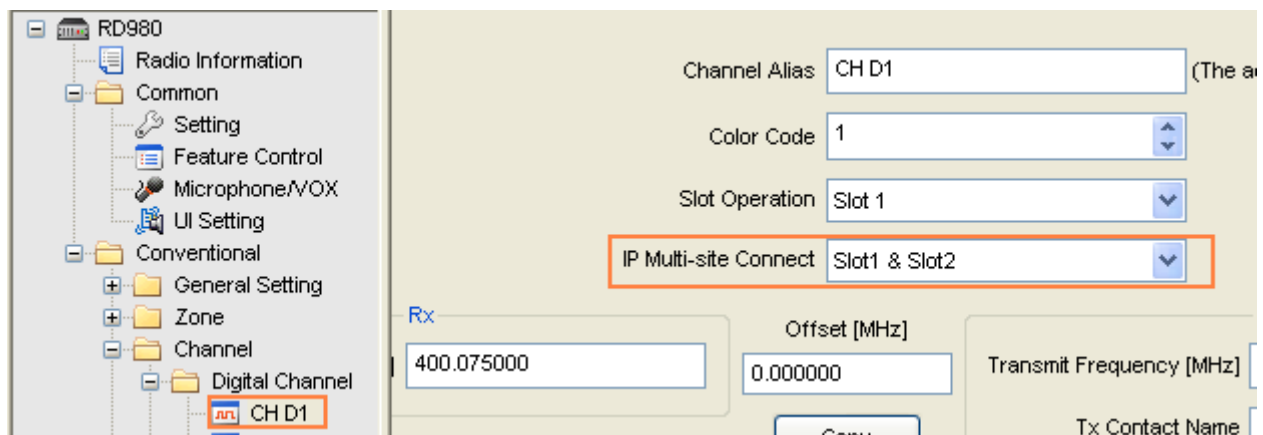
Parameter	Description
Third Party Connect Mode	Be sure to select “Normal” from the drop-down list.
RTP Packet Buffer Length	Be sure to set it to “6”.
Forward To PC	Be sure to select this option.
Third Party Server IP	Sets the IP address of the Smart Dispatch Gateway.
API interface Mode	Be sure to select “Hytera Defined Mode”. If you need to use the Voice Encryption feature, select “End to End Encryption Mode”.

- Channel

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the “IP Multi-site Connect” to “Slot 1 & Slot 2”.

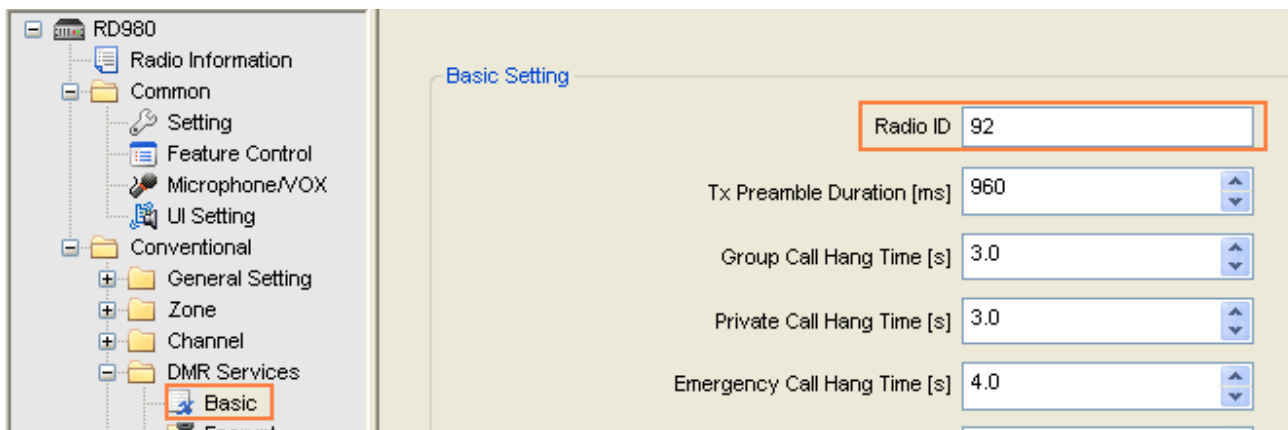
Thus the repeater uses Slot 1 and Slot 2 to forward the data in the IP Multi-site Connect network.



- DMR Services

Step 1 Go to “Conventional -> DMR Services -> Basic”.

Step 2 Set the radio ID on actual requirements.



Slave Repeater

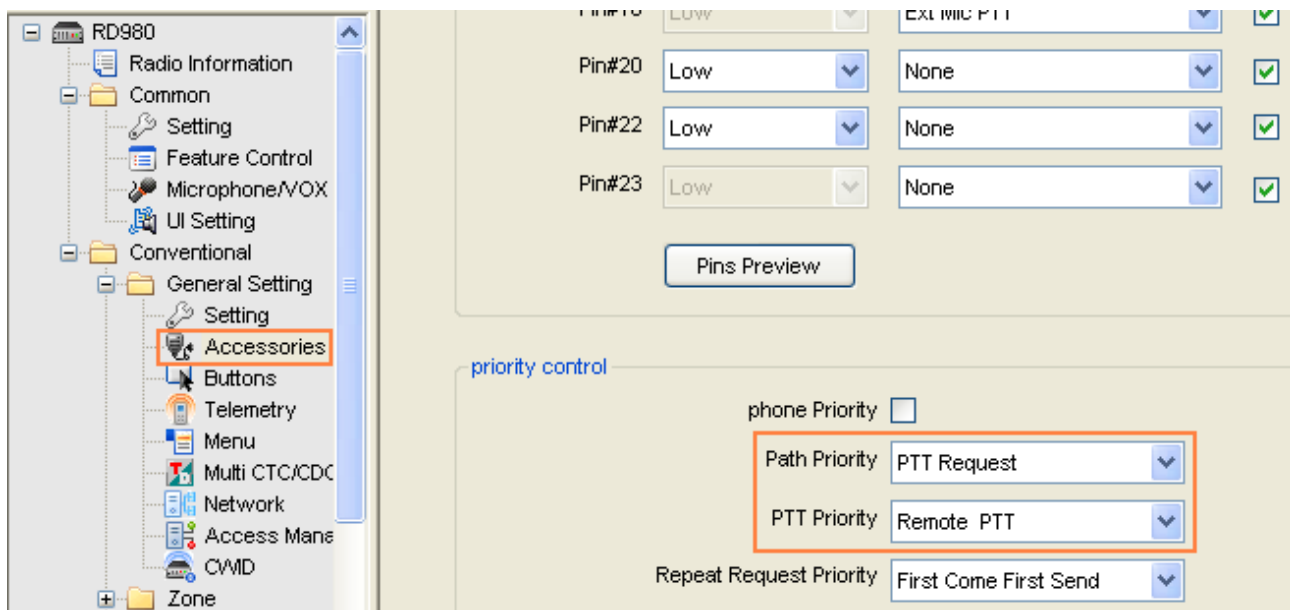
- General Setting

Step 1 Open the CPS and read the configuration from the repeater.

Step 2 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

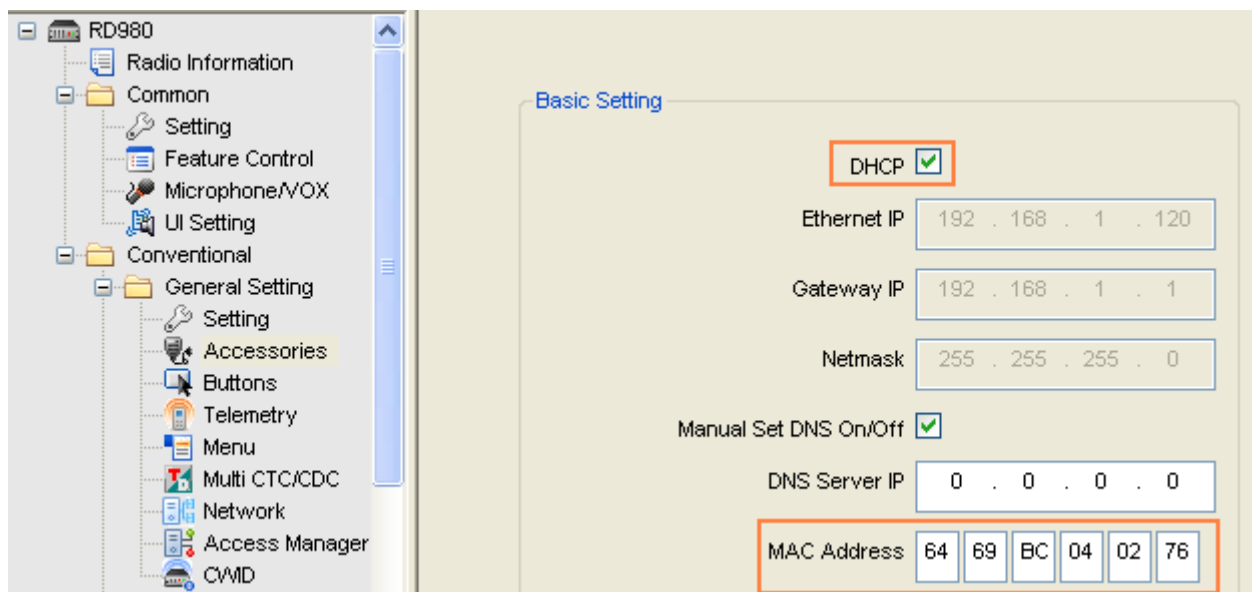
Step 3 Set the “Path Priority” to “PTT Request”, and set “PTT Priority” to “Remote PTT”.

When both the repeat request and PTT request come simultaneously, the repeater will first respond to the PTT request.



Step 4 Go to “Conventional -> General Setting -> Network” in the left navigation tree.

Step 5 Set the parameters in the “Basic Setting” box.

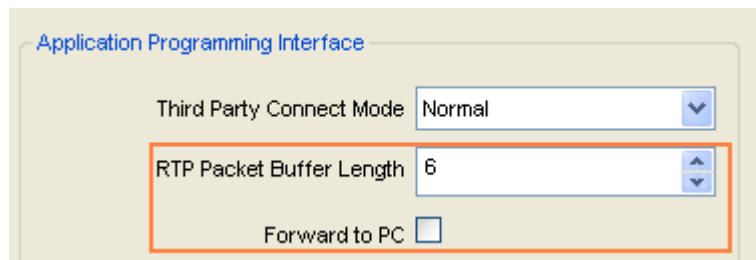


Parameter	Description
DHCP	It is suggested to select this option.
MAC Address	Sets the address of the repeater in the network. It must be unique. Make sure that each value in each part is different.

Step 6 Set the parameters in the “IP Multi-site Connect” box.

Parameter	Description
Repeater Type	When this option to “IP Multi-site Slave”, the repeater will act as the slave one in the IP Multi-site Connect network.
Jitter Buffer Length	This parameter defines the length of buffer area for the repeater to process the received voice and data in the IP network. You should set this parameter based on the actual network conditions. For example, if there is a poor network connection, the value should be greater to improve the communication continuity. In the IP Multi-site Connect, it is recommended to set this parameter to 3. The range is 1 - 8.
Network Authentication Key	<p>Sets the password for accessing the IP Multi-site Connect network. Please note that the authentication key of the slave repeater must be identical with that of the master repeater in the same IP Multi-site Connect network.</p> <p>If you leave this parameter blank, it indicates that no authentication is required.</p> <p>This key can contain up to 40 characters (0–9 and A–F).</p>
Master IP	Sets the IP address of the master repeater in the IP Multi-site Connect network.
IP Multi-site Service	Be sure to select this option.

Step 7 Set parameters in the “Application Programming Interface” box.



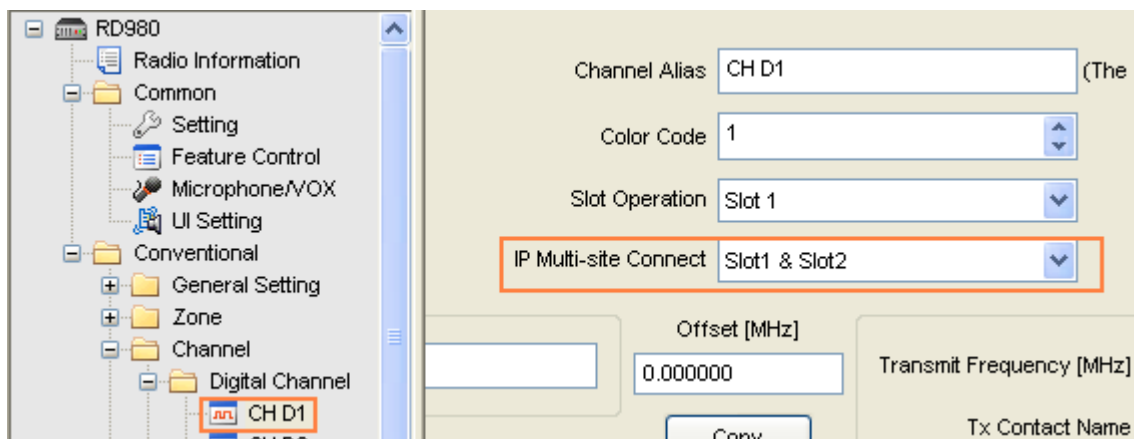
Parameter	Description
RTP Packet Buffer Length	Be sure to set it to "6".
Forward To PC	Do not select this option.

- Channel

Step 1 Go to "Conventional -> Channel -> Digital Channel" in the left navigation tree.

Step 2 Set the "IP Multi-site Connect" to "Slot 1 & Slot 2".

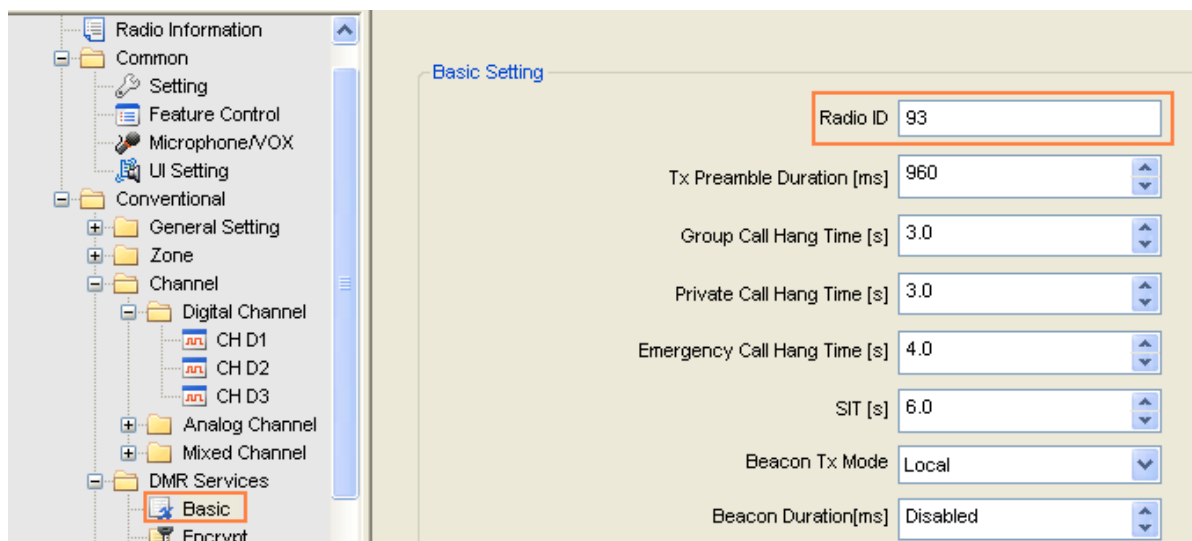
Thus the repeater uses Slot 1 and Slot 2 to transfer the data in the IP Multi-site Connect network.



- DMR Services

Step 1 Go to "Conventional -> DMR Services -> Basic".

Step 2 Set the radio ID.

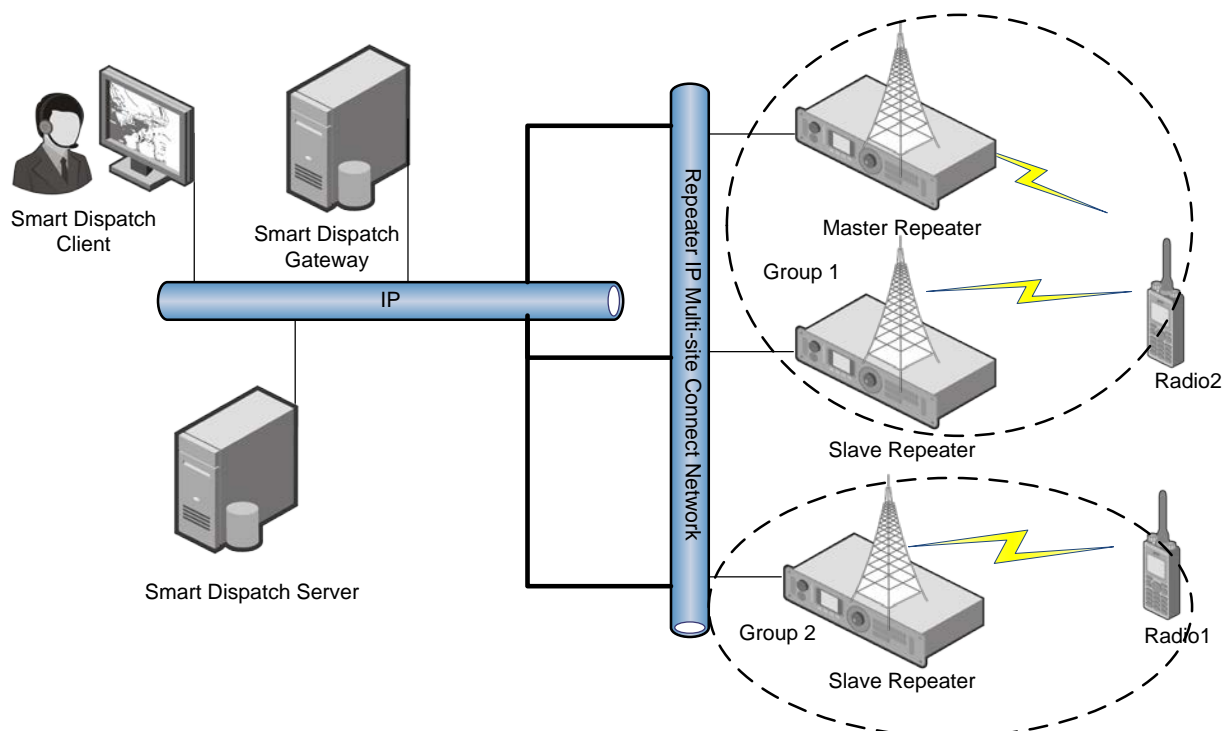


6.2.3 Selective Mode

In the selective mode, the repeater activates the Access Manager feature, to repeat the right data to the right radio over the IP network. Thus point-to-point communications can be achieved between repeaters with the same Access Manager feature.

Each repeater connects to the Smart Dispatch Gateway and transmits the received data from the air interface to it, while the Smart Dispatch sends the data and command to each repeater respectively.

The system architecture is illustrated as below.



Master Repeater

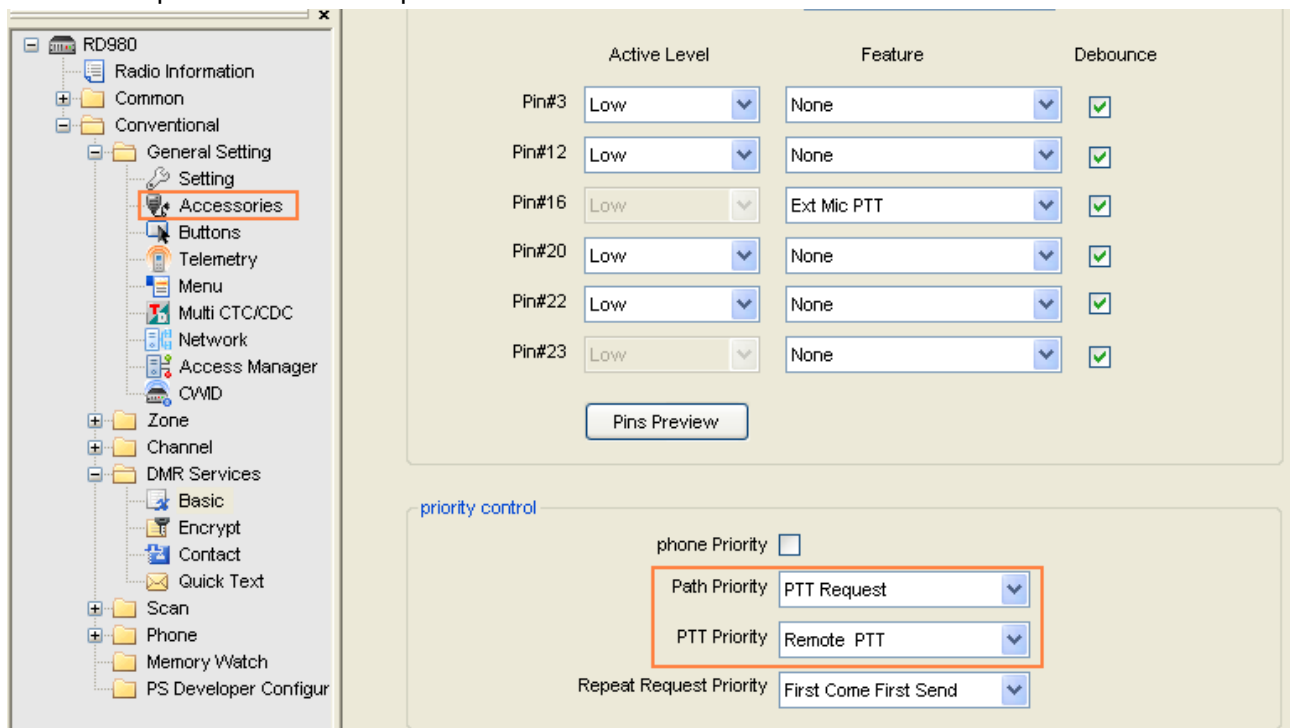
- General Setting

Step 1 Open the CPS and read the configuration from the repeater.

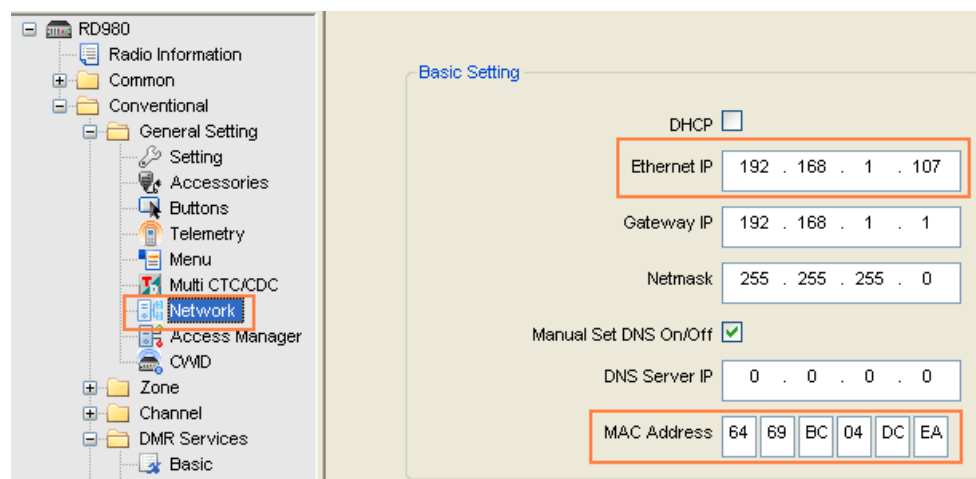
Step 2 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

Step 3 Set the “Path Priority” to “PTT Request”, and set “PTT Priority” to “Remote PTT”.

When both the repeat request and PTT request come simultaneously, the repeater will first respond to the PTT request.



Step 4 Go to “Conventional -> General Setting -> Network” in the left navigation tree, and set the parameters in the “Basic Setting” box.



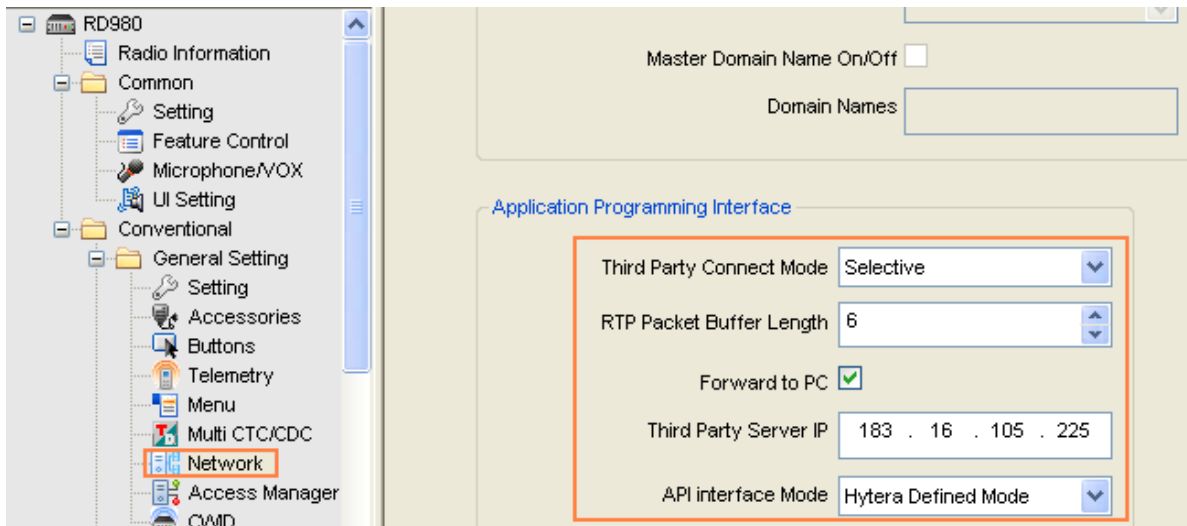
Parameter	Description
DHCP	Do not select this option.
Ethernet IP	It must be unique. Otherwise, communications may be failure in the system.
Gateway IP	It must be unique. Please note that the last digit should not be set to "0".
Netmask	255.255.255.0
MAC Address	Sets the address of the repeater in the network. It must be unique. Make sure that each value in each part is different.

Step 5 Set the parameters in the "IP Multi-site Connect" box.

Parameter	Description
Repeater Type	Sets this option to "IP Multi-site Master". Then the repeater will act as the master one in the IP Multi-site Connect network.
Jitter Buffer Length	This parameter defines the length of buffer area for the repeater to process the received voice and data in the IP network. You should set this parameter based on the actual network conditions. For example, if there is a poor network connection, the value should be greater to improve the communication continuity. In the IP Multi-site Connect, it is recommended to set this parameter to 3. The range is 1 - 8.
Network Authentication Key	Sets the password for accessing the IP Multi-site Connect network.

Parameter	Description
	<p>Please note that the authentication key of the slave repeater must be identical with that of the master repeater in the same IP Multi-site Connect network.</p> <p>If you leave this parameter blank, it indicates that no authentication is required.</p> <p>This key can contain up to 40 characters (0–9 and A–F).</p>
IP Multi-site Service	Be sure to select this option.

Step 6 Set parameters in the “Application Programming Interface” box.



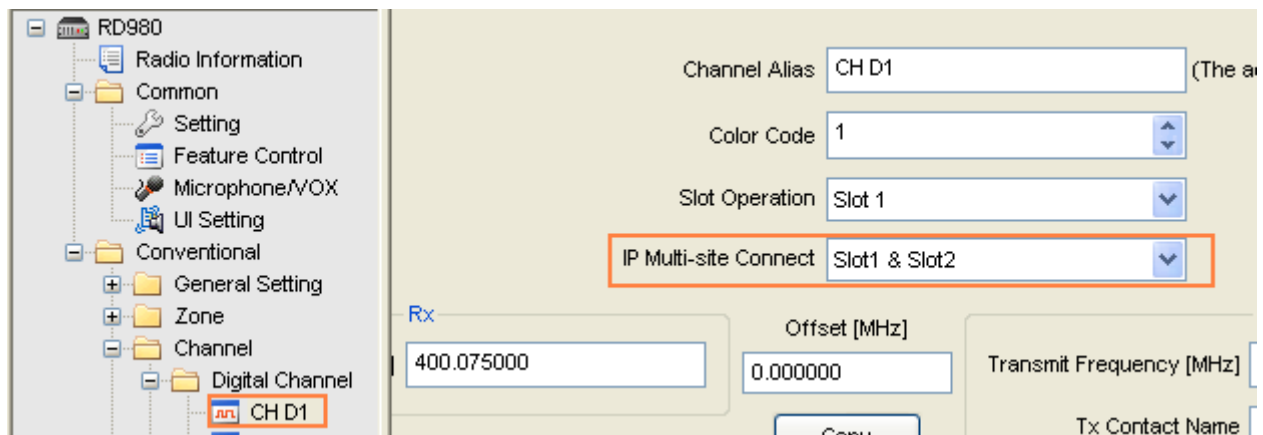
Parameter	Description
Third Party Connect Mode	Be sure to select “Selective” from the drop-down list.
RTP Packet Buffer Length	Be sure to set it to “6”.
Forward To PC	Be sure to select this option.
Third Party Server IP	Sets the IP address of the Smart Dispatch Gateway.
API interface Mode	Be sure to select “Hytera Defined Mode”. If you need to use the Voice Encryption feature, select “End to End Encryption Mode”.

- Channel

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the “IP Multi-site Connect” to “Slot 1 & Slot 2”.

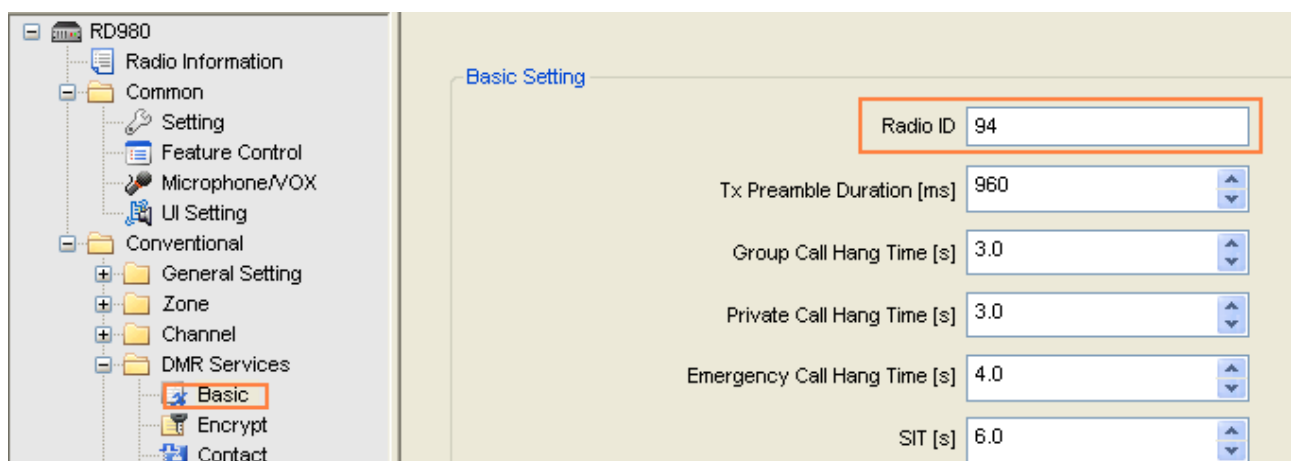
Thus the repeater uses Slot 1 and Slot 2 to forward the data in the IP Multi-site Connect network.



- DMR Services

Step 1 Go to “Conventional -> DMR Services -> Basic”.

Step 2 Set the radio ID.



Slave Repeater

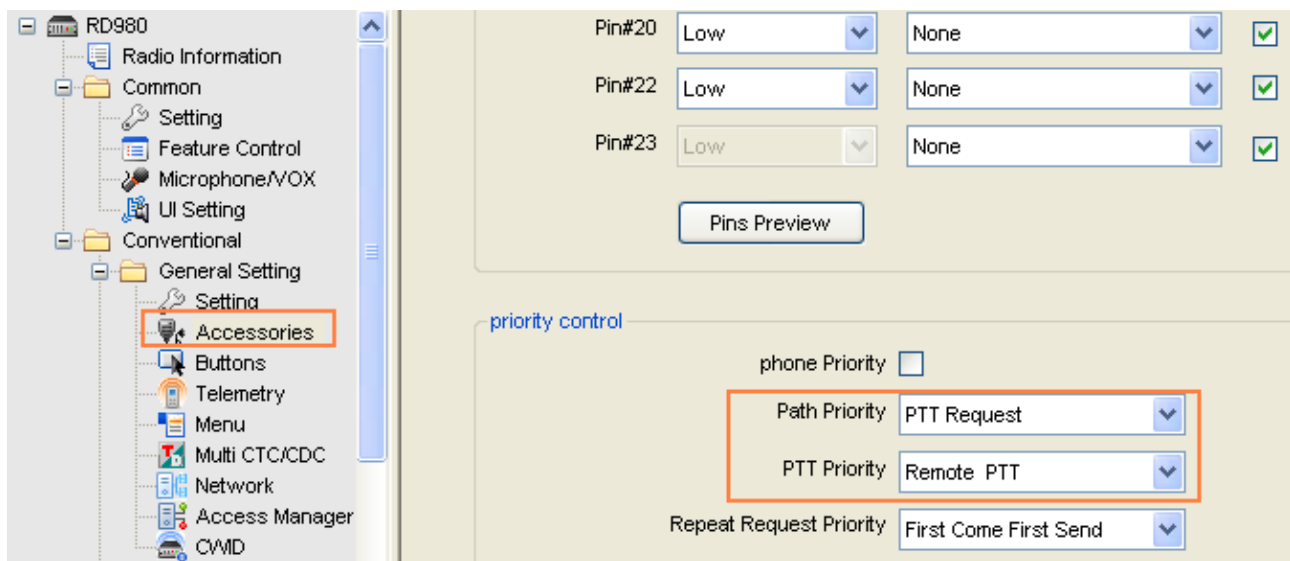
- Basic Setting

Step 1 Open the CPS and read the configuration from the repeater.

Step 2 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

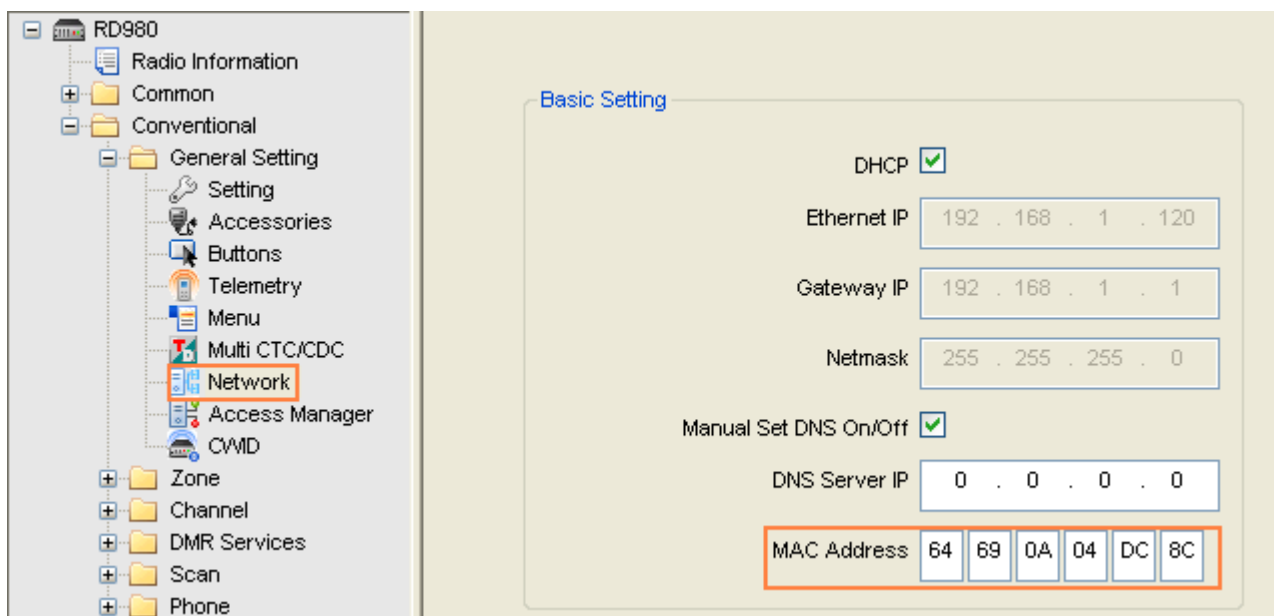
Step 3 Set the “Path Priority” to “PTT Request”, and set “PTT Priority” to “Remote PTT”.

When both the repeat request and PTT request come simultaneously, the repeater will first respond to the PTT request.



Step 4 Go to “Conventional -> General Setting -> Network” in the left navigation tree.

Step 5 Set the parameters in the “Basic Setting” box.



Parameter	Description
DHCP	It is suggested to select this option.
MAC Address	Sets the address of the repeater in the network. It must be unique. Make sure that each value in the each part is different.

Step 6 Set the parameters in the “IP Multi-site Connect” box.

IP Multi-site Connect

Repeater Type

Jitter Buffer Length

Network Authentication Key

Master IP

Master UDP Port

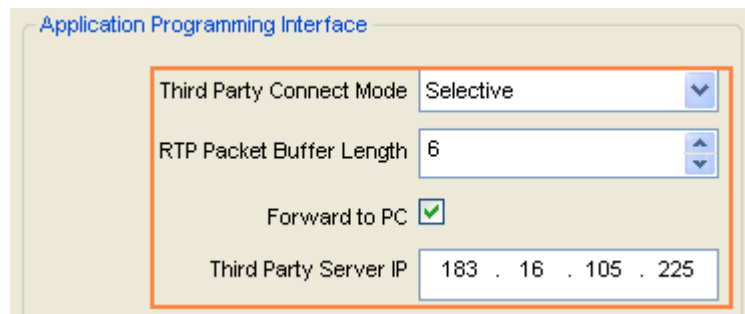
IP Multi-site Networking UDP Port

P2P Firewall Open Timer[sec]

☒ IP Multi-site Service

Parameter	Description
Repeater Type	Sets this option to “IP Multi-site Slave”. Then the repeater will act as the slave one in the IP Multi-site Connect network.
Jitter Buffer Length	This parameter defines the length of buffer area for the repeater to process the received voice and data in the IP network. You should set this parameter based on the actual network conditions. For example, if there is a poor network connection, the value should be greater to improve the communication continuity. In the IP Multi-site Connect, it is recommended to set this parameter to 3. The range is 1 - 8.
Network Authentication Key	<p>Sets the password for accessing the IP Multi-site Connect network. Please note that the authentication key of the slave repeater must be identical with that of the master repeater in the same IP Multi-site Connect network.</p> <p>If you leave this parameter blank, it indicates that no authentication is required.</p> <p>This key can contain up to 40 characters (0–9 and A–F).</p>
Master IP	Sets the IP address of the master repeater in the IP Multi-site Connect network.
IP Multi-site Service	Be sure to select this option.

Step 7 Set parameters in the “Application Programming Interface” box.



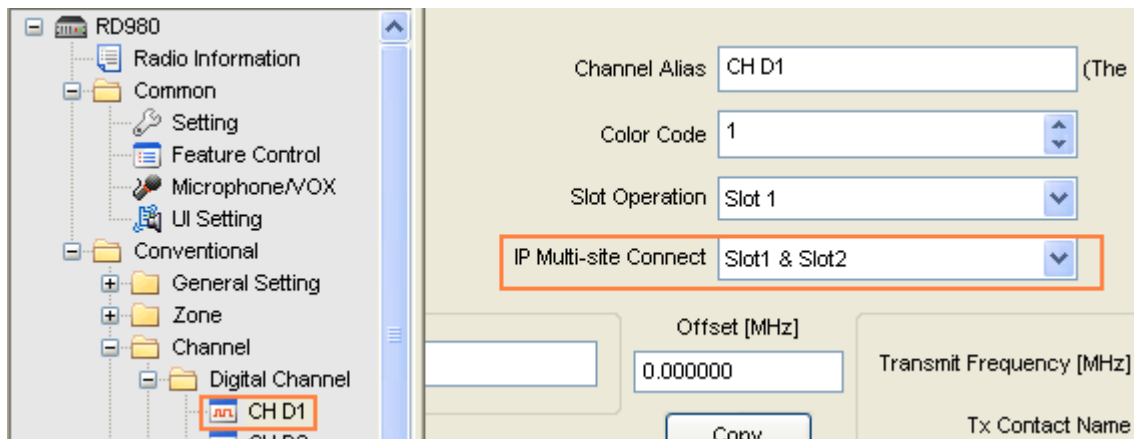
Parameter	Description
Third Party Connect Mode	Be sure to select “Selective” from the drop-down list.
RTP Packet Buffer Length	Be sure to set it to “6”.
Forward To PC	Be sure to select this option.
Third Party Server IP	Sets the IP address of the Smart Dispatch Gateway.

- Channel

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the “IP Multi-site Connect” to “Slot 1 & Slot 2”.

Thus the repeater uses Slot 1 and Slot 2 to forward the data in the IP Multi-site Connect network.

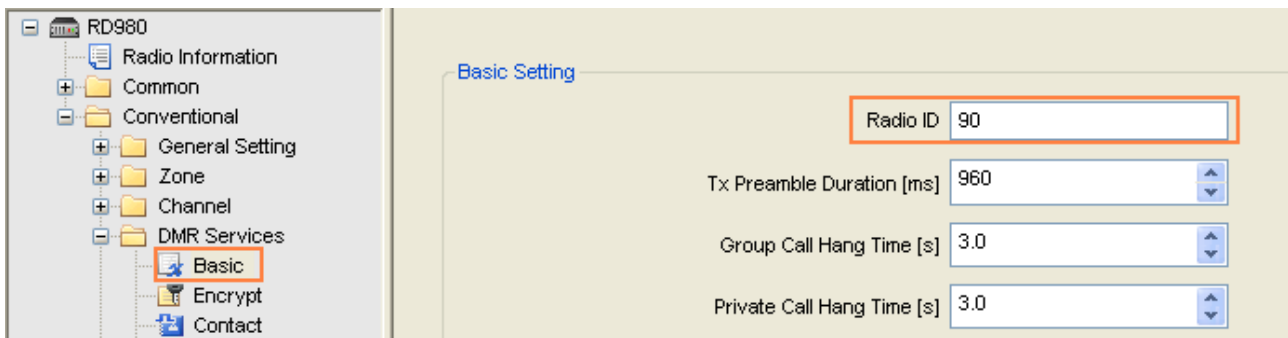


- DMR Services

Step 3 Go to “Conventional -> DMR Services -> Basic”.

Step 4 Set the radio ID.

The radio ID of the slave repeater cannot be identical with that of the master repeater.



6.3 Encryption

You should set the encrypt key for the repeater before using the Voice Encryption feature. Make sure that this key is identical with that of the radio and Smart Dispatch Client. In addition, you should configure the appropriate parameters in the Smart Dispatch Gateway (See the description of “[Encrypt Slot](#)” in “[9.3 Repeater Settings](#)”).

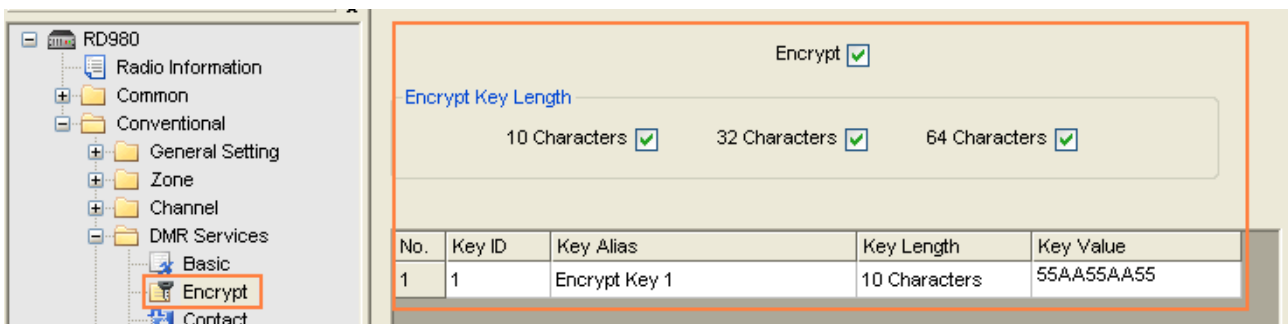
⚠ Caution

- The “API interface Mode” parameter should be set to “End to End Encryption Mode” for the repeater via the CPS. For more information, see the previous section “[6.2 IP Multi-site Connect Mode](#)”.
- If both the master repeater and slave repeater are available in the system, you should configure the same encrypt key for them.

Follow the steps below to set the encrypt key:

Step 1 Go to “Conventional -> DMR Services -> Encrypt”.

Step 2 Select “Encrypt” and enter an encrypt key.



Parameter	Description
Encrypt Key Length	Defines the length of the key you enter. Currently there are three options: 10, 32 and 64 characters. As long as you set this parameter, you can enter the encrypt key in the “Key Length”.

Parameter	Description
Key ID	The ID must be unique.
Key Alias	The alias must be unique.
Key Value	Be sure to enter the hexadecimal numbers. The length of key value is subject to the settings in the “Key Length”.

Step 3 Go to “Conventional -> Channel -> Digital Channel”.

Step 4 Set the encrypt key. For example, if you use Slot 1 for voice transmission, select “Slot1 Encrypt”, and choose the corresponding encrypt key for Slot 1.



Caution

After setting the encrypt key for Slot 1 in the CPS, you should select Slot 1 for outputting the audio via the menu in the repeater: “Main Menu -> Digital Speaker -> Slot 1”.

7. Programming the Portable Radio

Caution

- The CPS (V5.05.xx.xxx or later) is required.
- To activate the Pseudo Trunking feature, there must be two dispatch stations in the same group but on different slots.

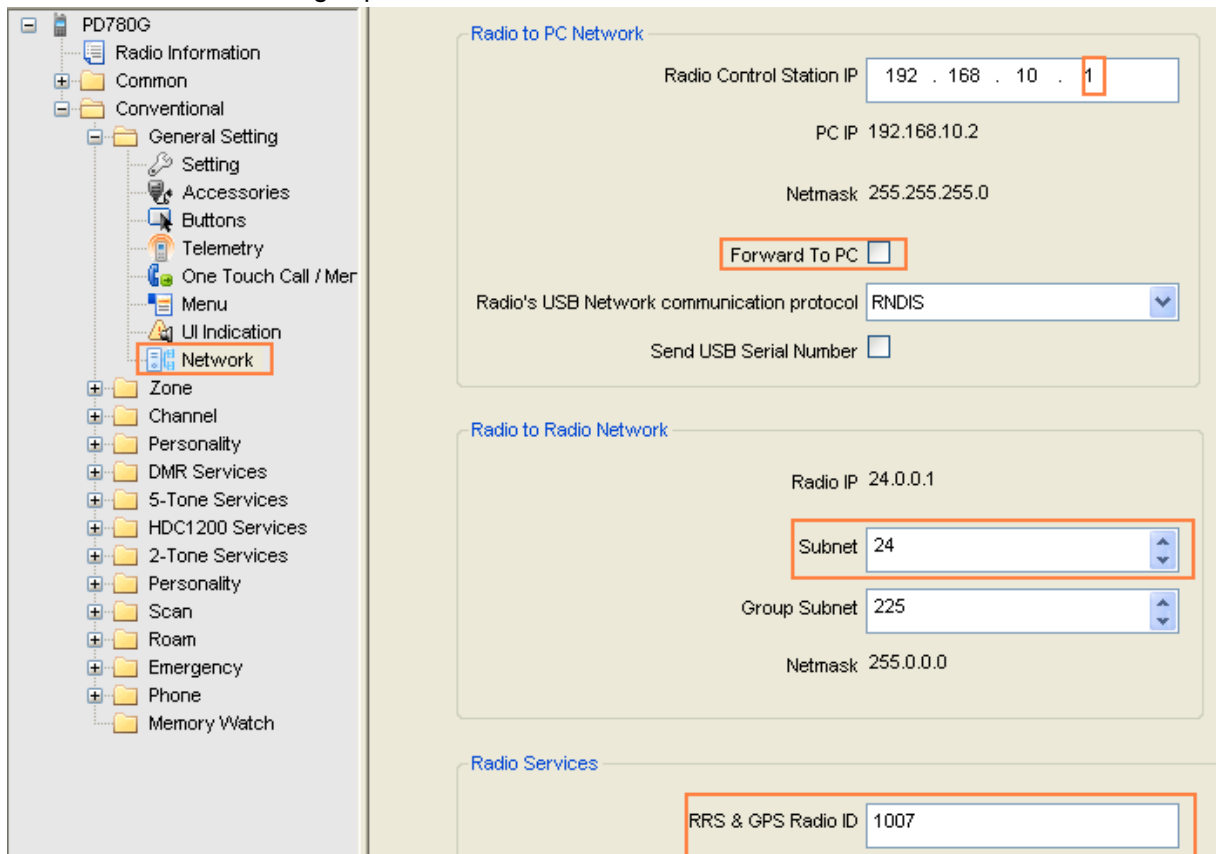
7.1 Basic Settings

Step 1 Open the CPS and use it to read the data from the portable radio (see Step2 to Step4 in “[5.1 Basic Settings](#)”).

Step 2 Go to “Conventional -> General Setting -> Network” in the left navigation tree.

Step 3 Set the following parameters.

Do follow the settings specified in the table below.



Radio to PC Network

Radio Control Station IP: 192 . 168 . 10 . 1

PC IP: 192.168.10.2

Netmask: 255.255.255.0

Forward To PC: ☐

Radio's USB Network communication protocol: RNDIS

Send USB Serial Number: ☐

Radio to Radio Network

Radio IP: 24.0.0.1

Subnet: 24

Group Subnet: 225

Netmask: 255.0.0.0

Radio Services

RRS & GPS Radio ID: 1007

RRS Service

RRS Delay Registration Time[s] 30

RRS Registration Retry Counter 500

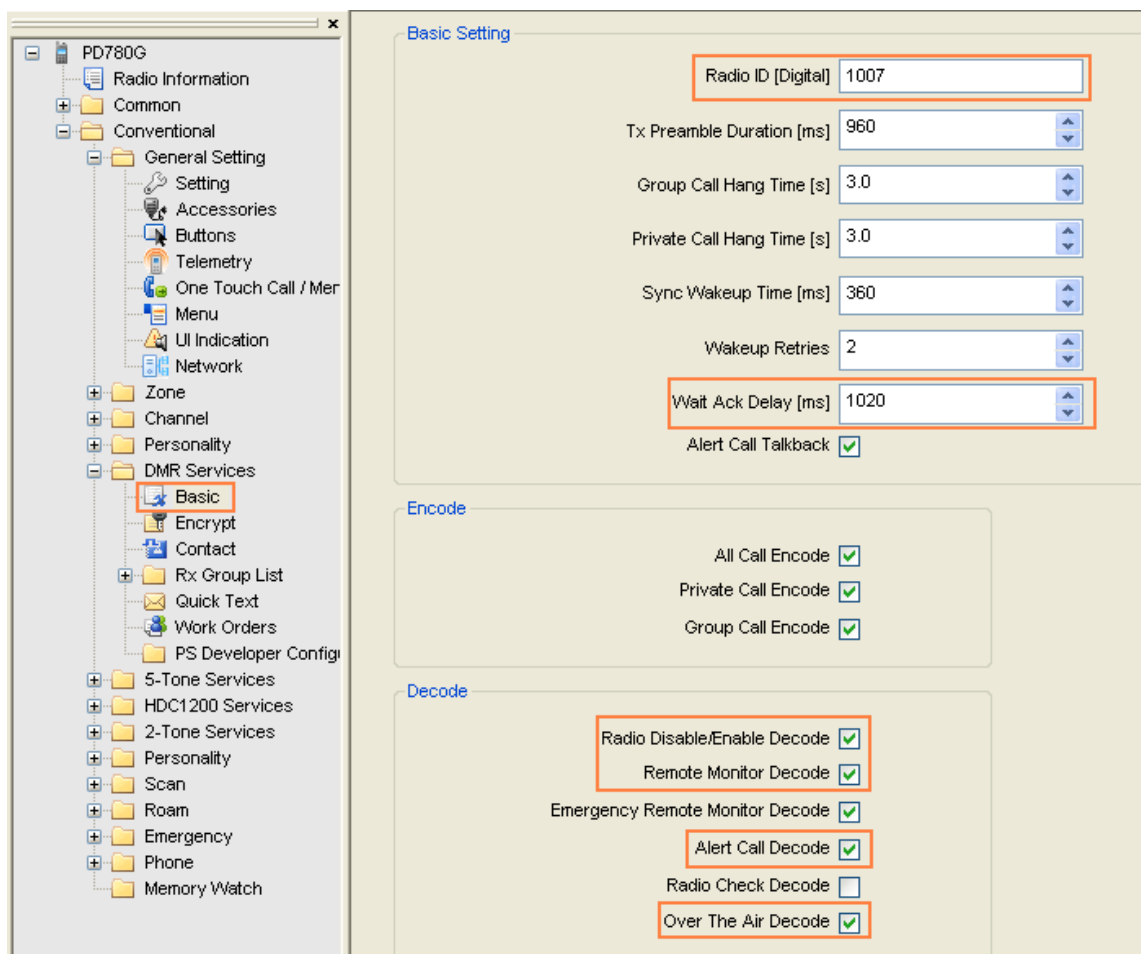
RRS Registration Retry Interval[s] 300

Parameter	Settings
RRS & GPS Radio ID	<p>Be sure to enter the corresponding radio ID specified in the dispatch station or repeater. Otherwise, the registration will fail and the radio can not work properly.</p> <ul style="list-style-type: none"> ● Enters the dispatch station ID in this field if the dispatch station is employed in the Smart Dispatch system. ● If the repeater is employed in the Smart Dispatch system, do as follows: <ul style="list-style-type: none"> ➢ Enters the ID of the master repeater in the Normal mode. ➢ Enters the ID of the repeater which the radio belongs to in the Selective mode
Forward To PC	DO NOT select this option; otherwise, the message may not be sent successfully.
Subnet	It must be consistent with that in the dispatch station or repeater.
RRS Delay Registration Time	Defines the time between the power-on and registration. It is recommended to set to 10 seconds.
RRS Registration Retry Counter	<p>Defines the maximum retry times for the portable radio to send the registration message.</p> <p>It must be set to 500 (maximum).</p>
RRS Registration Retry Interval	Defines the interval of retrying the registration. It must be set to 300 (maximum).

Step 4 Click “Close” to finish.

7.2 DMR Service Settings

Step 1 Go to “Conventional -> DMR Services -> Basic”.



Step 2 Set the parameters as per the table below.

Parameter	Settings
Radio ID [Digital]	Sets the identity of the portable radio. It must be unique. The range is 1–16776415.
Wait Ack Delay [ms]	Sets the time period of waiting for an ACK after sending data or command. The value must be greater than 990.
Radio Disable/Enable Decode	Sets whether the portable radio can decode the Radio Disable/Enable command. Be sure to select this option.
Remote Monitor Decode	Sets whether the portable radio can decode the Remote Monitor command. Be sure to select this option.

Parameter	Settings
Alert Call Decode	Sets whether the portable radio can decode the Alert Call command. Be sure to select this option.

7.3 Channel Settings

You can choose to deploy one dispatch station in a group to transmit both the audio signals and GPS data, or two dispatch stations in a group to transmit the audio signals and GPS data separately. Thus, you must configure the portable radio according to the deployment of the dispatch station.

One dispatch station in a group

If only one dispatch station is employed in a group to transmit both the audio signals and GPS data, you just need to set one channel for the portable radio. Be sure to set both the “GPS Revert Channel” and “RRS Revert Channel” to “Selected”.

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Set the following parameters.



You must select the options: “Emergency Alarm Indication” and “Emergency Call Indication”.

PD780G

Radio Information

- Common
- Conventional
 - General Setting
 - Zone
 - Channel
 - Digital Channel
 - CH D1
 - CH D2
 - CH D3
 - Analog Channel
 - Personality
 - DMR Services
 - 5-Tone Services
 - HDC1200 Services
 - 2-Tone Services
 - Personality
 - Scan
 - Roam
 - Emergency
 - Phone
 - Memory Watch

Channel Alias: CH D1 (The actual display may change, See the...)

Color Code: 1

Slot Operation: Slot 1

Pseudo Trunk Designated TX: None

Scan List/Roam List: None

Auto Start Scan: ☐

Quick GPS: ☐

Talk Around: ☐

Rx Only: ☐

IP Multi-site Connect: ☐

Auto Start Roam: ☐

VOX: ☐

Option Board: ☐

Priority Interrupt Encode: ☐

Priority Interrupt Decode: ☐

Reliable Priority Interrupt Transmit: ☐

Enhanced Channel Access: ☐

Rx

Receive Frequency [MHz]: 460.000000

Rx Group List: Rx Group List 1

Emergency Alarm Indication: ☒

Emergency Alarm Ack: ☐

Emergency Call Indication: ☒

Offset [MHz]: 0.000000

Copy

Tx

Transmit Frequency [MHz]: 455.000000

Tx Contact Name: Call 1

GPS Revert Channel: Selected

RRS Revert Channel: Selected

Emergency System: DigitalSys 1

Two dispatch stations in a group


If two dispatch stations are employed in a group to transmit the audio signals and GPS data separately, you need to set two channels for the portable radio. One is used to transmit the audio signals while the other to transmit the GPS data. More importantly, they must use different slots.

Step 1 Go to “Conventional -> Channel -> Digital Channel”.

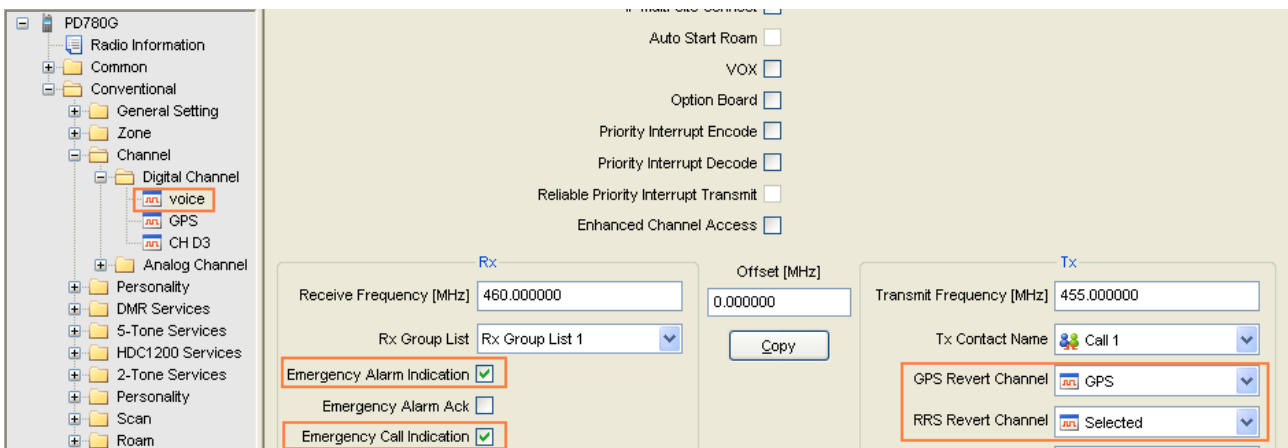
Step 2 Set the following parameters.



Note

Click the button  at the bottom of the current channel configuration page to add a channel.

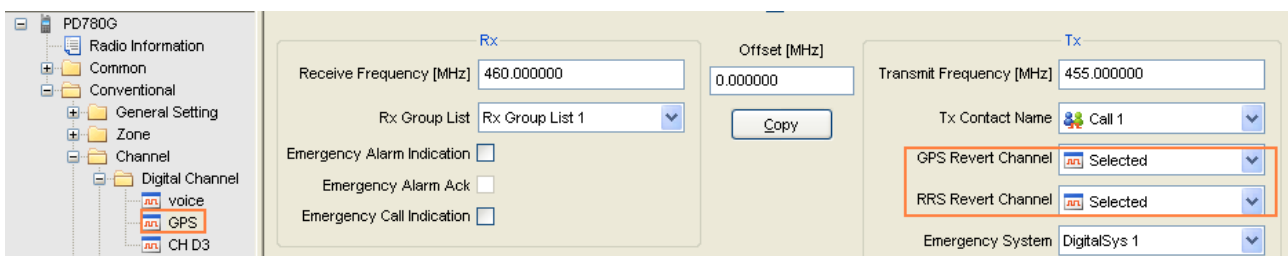
- Setting the voice channel for audio transmission




Note

Do select the channel used for GPS data transmission from the drop-down list of “GPS Revert Channel”. And set the “RRS Revert Channel” to “Selected”.

- Setting the channel for GPS data transmission




Note

Do set both the “GPS Revert Channel” and “RRS Revert Channel” to “Selected”.

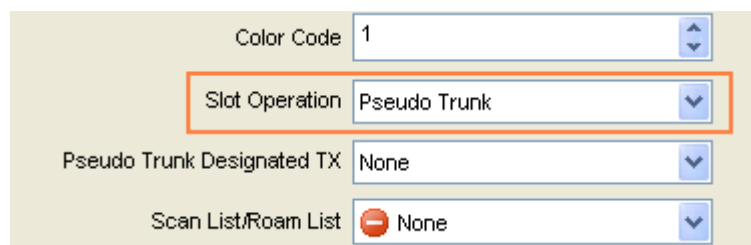
- Setting the channel for quick GPS data transmission



Activating the Pseudo Trunking feature

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

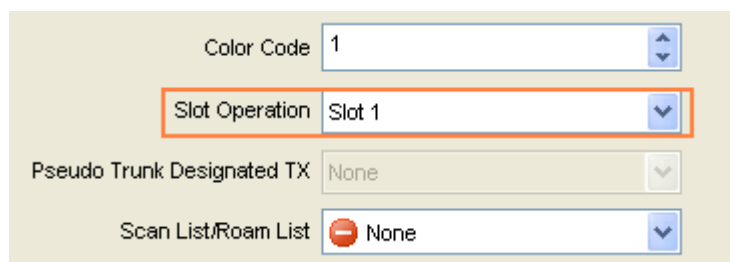
Step 2 Set the “Slot Operation” to “Pseudo Trunk”.



Deactivating the Pseudo Trunking feature

Step 1 Go to “Conventional -> Channel -> Digital Channel” in the left navigation tree.

Step 2 Select the same slot specified for the dispatch station from the “Slot Operation” drop-down list.



7.4 Encryption Settings

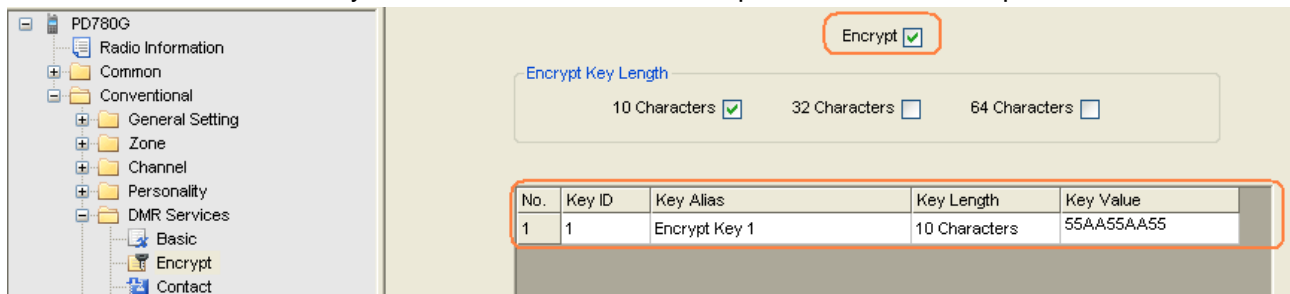
You should set the encrypt key for the portable radio before using the Voice Encryption feature. Make sure that this key is identical with that of the repeater and Smart Dispatch Client. In addition, you should configure the appropriate parameter in the Smart Dispatch Gateway (See the description of “Encrypt Slot” in “[9.3 Repeater Settings](#)”).

Follow the steps below to set the encrypt key:

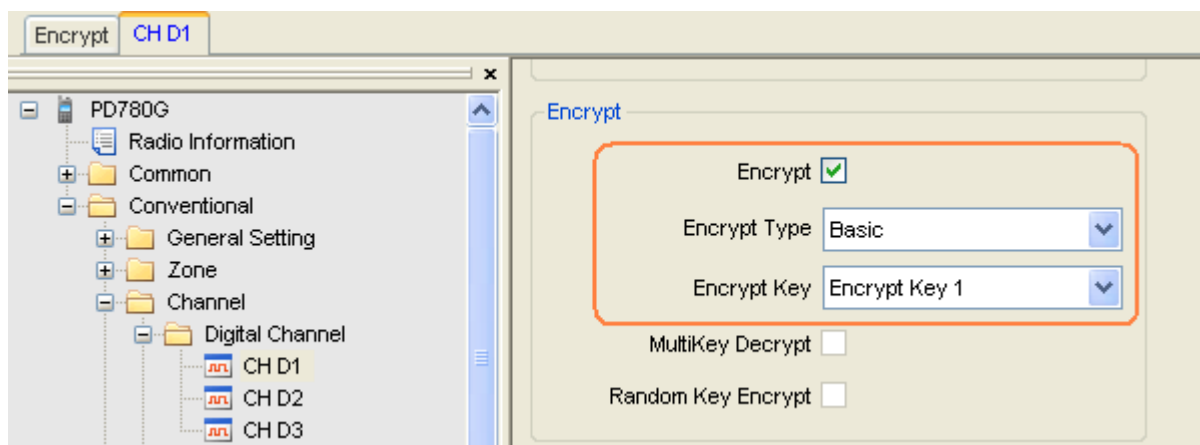
Step 1 Go to “Conventional -> DMR Services -> Encrypt” in the left navigation tree.

Step 2 Select “Encrypt” and create an encrypt key.

Ensure that this key is the same with that of the repeater and Smart Dispatch.

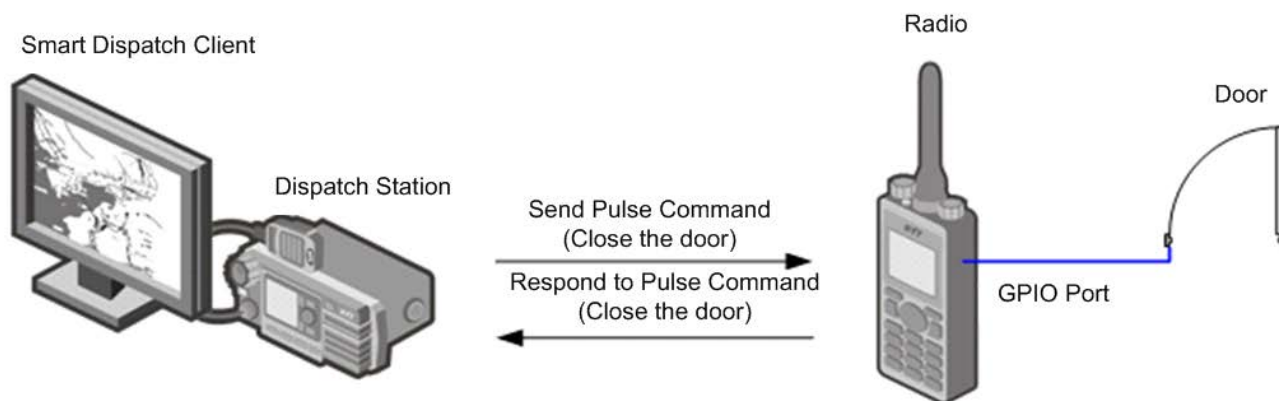


Parameter	Description
Encrypt Key Length	Defines the length of the key you enter. Currently there are three options: 10, 32 and 64 characters. As long as you set this parameter, you can enter the encrypt key in the “Key Length”.
Key ID	The ID must be unique.
Key Alias	The alias must be unique.
Key Value	Be sure to enter the hexadecimal numbers. The length of key value is subject to the settings in the “Key Length”.

Step 3 Go to “Conventional -> Channel -> Digital Channel”.**Step 4** Set the encrypt key for the channel on which the encrypted voice is transmitted.

7.5 Telemetry Settings

Through the Smart Dispatch Client, you can remotely monitor the status of the external device connected to the radio, as well as controlling it.



To apply the Telemetry feature, you should connect the monitored device to the GPIO port of the radio, define the telemetry commands (see “[10.9 Telemetry](#)”) and enable the radio via the CPS in the following steps to respond to the commands.

Step 1 Go to “Conventional -> General Setting -> Telemetry” in the left navigation tree of the CPS.

Step 2 Configure how the radio responds to the received telemetry commands or sends the telemetry commands to the Smart Dispatch.

For detailed parameter description, see the *CPS HELP* embedded in the CPS.

No.	Feature	Description	Action	Pulse Time[ms]	Digital Call	Target VIO	Quick Text
1	Telemetry Button1	Button1	None	200	None	None	None
2	Telemetry Button2	Button2	None	200	None	None	None
3	Telemetry Button3	Button3	None	200	None	None	None
4	Telemetry VIO1	TelemetryVIO1	On Active/Inactive Voltage	200	None	None	None
5	Telemetry VIO2	TelemetryVIO2	Send Status Command	200	Call 1	None	None
6	Telemetry VIO3	TelemetryVIO3	Send Status w/ Text Command	200	Call 1	None	Hello!
7	Telemetry VIO4	TelemetryVIO4	Send Status w/ GPS Message	200	Call 1	None	None
8	Telemetry VIO5	TelemetryVIO5	Send Text Message Only	200	Call 1	None	Thank You!
9	Telemetry VIO6	TelemetryVIO6	None	200	None	None	None

- Responding to the Smart Dispatch’s telemetry commands

The following table introduces the action taken by the radio to respond to the corresponding telemetry command from the Smart Dispatch.

Smart Dispatch Command	Radio Action	Radio GPIO Port Response
Send Pulse Command	On Pulse Command	Upon the receipt of “Send Pulse Command”, the radio’s GPIO port (corresponding to the VIO port) will output an active level with specific pulse width (e.g. 200ms).
Send Toggle Voltage	On Toggle Voltage Command	Upon the receipt of “Send Toggle Voltage Command”, the radio will toggle the level of the GPIO port

Smart Dispatch Command	Radio Action	Radio GPIO Port Response
Command		(corresponding to the VIO port). For example, currently the GPIO port is using high level, and it will toggle to low level as soon as the radio receives this command.
Send Active Voltage Command	On Active/Inactive Voltage Command	Upon the receipt of “Send Active Voltage Command”, the radio’s GPIO port (corresponding to the VIO port) will output an active level (here we take low level as the active level).
Send Inactive Voltage Command	On Active/Inactive Voltage Command	Upon the receipt of “Send Inactive Voltage Command”, the radio’s GPIO port (corresponding to the VIO port) will output an inactive level (here we take high level as the inactive level).

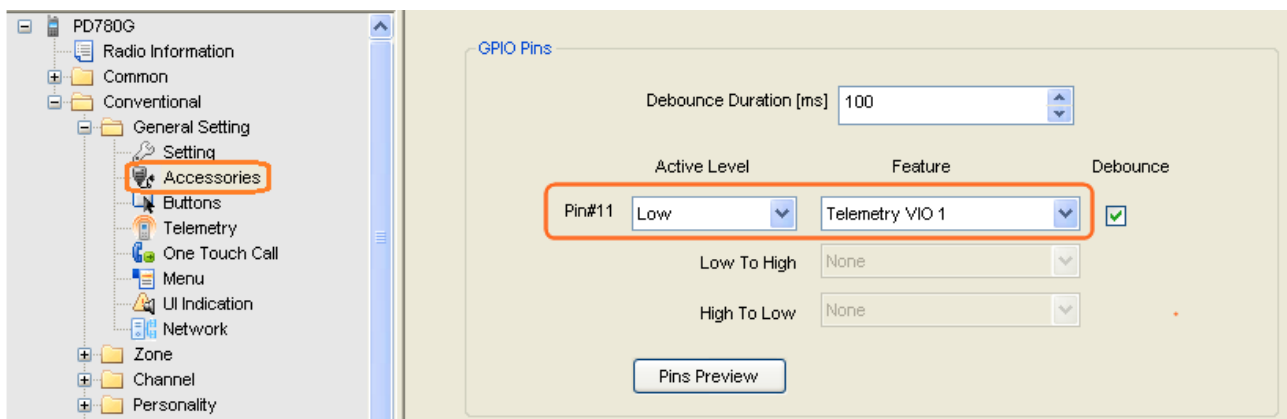
- Sending telemetry commands

The following table describes the telemetry message commands sent from the radio to the Smart Dispatch.

Radio Command	Description
Send Status Command	Sends all the VIO statuses of the radio to the Smart Dispatch.
Sends Status w/ Text Command	Sends all the VIO statuses of the radio with a preset text message to the Smart Dispatch.
Sends Status w/ GPS Message Command	Sends all the VIO statuses and the current location information of the radio to the Smart Dispatch.
Send Text Message Only	Sends only the preset text message to the Smart Dispatch whenever the VIO port level varies.

Step 3 Go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

Step 4 Set the GPIO port corresponding to the preset VIO port of the radio.



The “Active Level” selection decides which level will trigger the performance of the selected “Feature”. The “Feature” is corresponding to the “Feature” settings in the “Telemetry” interface. If you want to assign the VIO port with the feature of an output telemetry command:

- When the “Active Level” is set to “Low” or “High”, the GPIO port will be triggered to send the telemetry command when its voltage reaches the active level.
- When the “Active Level” is set to “Edge”, the GPIO port will be triggered to send the telemetry command when its voltage is changing to the specific level. That is, if a telemetry VIO is assigned to “Low To High”, the GPIO port will send the preset telemetry command during the voltage change from low to high; if a telemetry VIO is assigned to “High To Low”, the GPIO port will send the preset telemetry command during the voltage change from high to low.

⚠ Caution

When the “Active Level” is set to “Edge”, the telemetry VIO of the radio can send text message only.

7.6 Quick GPS Settings

When the Quick GPS feature is enabled for the radio, the GPS polling will be transmitted more securely and efficiently.

To set this feature, go to “Conventional -> General Setting -> Accessories” in the left navigation tree.

⚠ Caution

- Different report orders are required on radios with the Quick GPS feature enabled. You need to set this parameter for the radio based on its actual report order.
- The other parameters in the “Quick GPS” settings shall be set to the same values respectively with those set for other radios whose Quick GPS feature is also enabled.

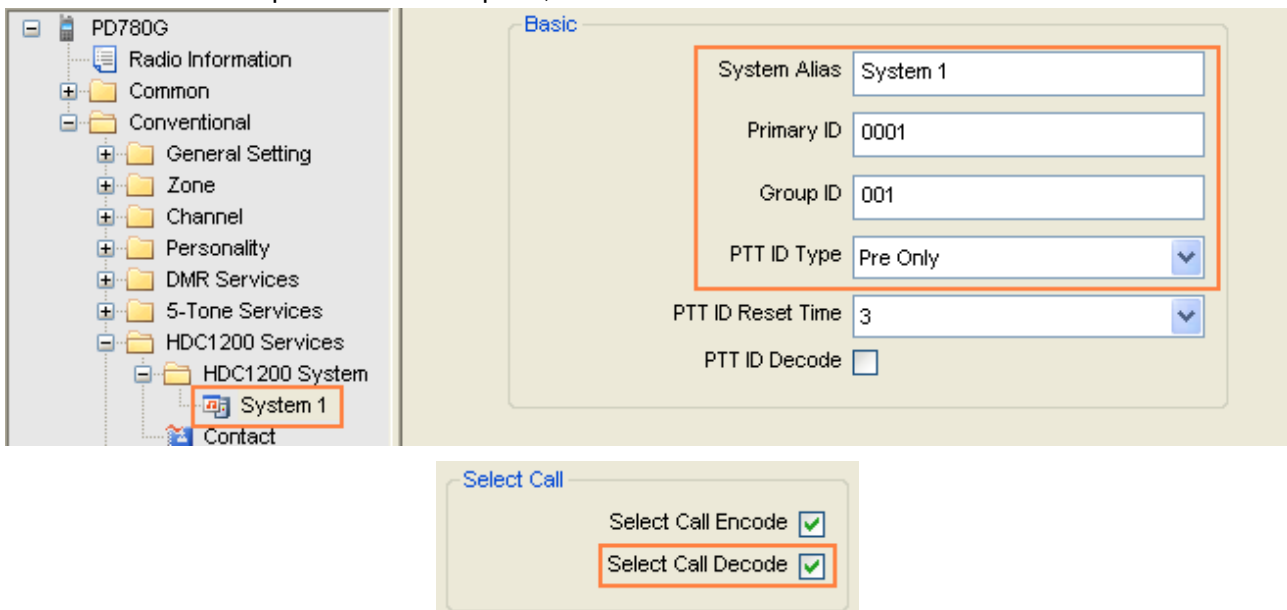


7.7 HDC1200 Service Settings

To make or receive a call with HDC1200 signaling on analog channel, you need to set the related parameters of the radio to realize PTT ID and select call assignment.

Step 1 Go to “Conventional -> HDC1200 Services -> HDC1200 System -> System 1” in the left navigation tree. Then set the following parameters.

For detailed parameter description, see *CPS HELP* embedded in the CPS.



Note

The options in “Select Call” are selected by default. Leave them at their default settings. These options are available for users who are authorized to view the developer version of the CPS, such as our engineers, technicians, etc.

Step 2 Go to “Conventional -> HDC1200 Services -> HDC1200 System -> Contact” in the left navigation tree. Then set the following parameters.

For detailed parameter description, see *CPS HELP* embedded in the CPS.

The left navigation tree shows the following structure:

- PD780G
 - Radio Information
 - Common
 - Conventional
 - General Setting
 - Zone
 - Channel
 - Personality
 - DMR Services
 - 5-Tone Services
 - HDC1200 Services
 - HDC1200 System
 - System 1
 - Contact
 - 2-Tone Services

The table displays the following data:

No.	Call Alias	HDC System	Call Type	Call ID
1	HDC1200 Call X	System 1	Group Call	E001
2	HDC1200 Call 1	System 1	Private Call	0001
3	HDC1200 Call 2	System 1	All Call	FFFF

Step 3 Go to “Conventional -> Channel -> Analog Channel” in the left navigation tree. Then select the channel to achieve calls with HDC1200 signaling, and set the following parameters.

For detailed parameter description, see *CPS HELP* embedded in the CPS.

The left navigation tree shows the following structure:

- PD780G
 - Radio Information
 - Common
 - Conventional
 - General Setting
 - Zone
 - Channel
 - Digital Channel
 - Analog Channel
 - CH A1
 - CH A2
 - CH A3
 - Personality
 - DMR Services
 - 5-Tone Services
 - HDC1200 Services
 - 2-Tone Services
 - Personality
 - Scan
 - Roam
 - Emergency
 - Phone
 - Memory Watch

The main configuration area shows the following parameters for CH A1:

- Channel Alias: CH A1 (The actual display may change, See the Hel
- Channel Spacing [KHz]: 12.5
- CTCSS Tail Revert Option: 180
- Signaling Type: HDC1200
- Personality List: Personality 1
- Scan List: Scan List 1
- Tx Admit Not Applied in Auto Reset Mode: ☐
- Auto Start Scan: ☐
- Talk Around: ☐
- Emp De-emp: ☒
- Scrambler: ☐
- Flat Audio: ☐
- Rx Only: ☐
- VOX: ☐
- Option Board: ☐
- Compandor: ☐

The Rx and Tx sections show the following parameters:

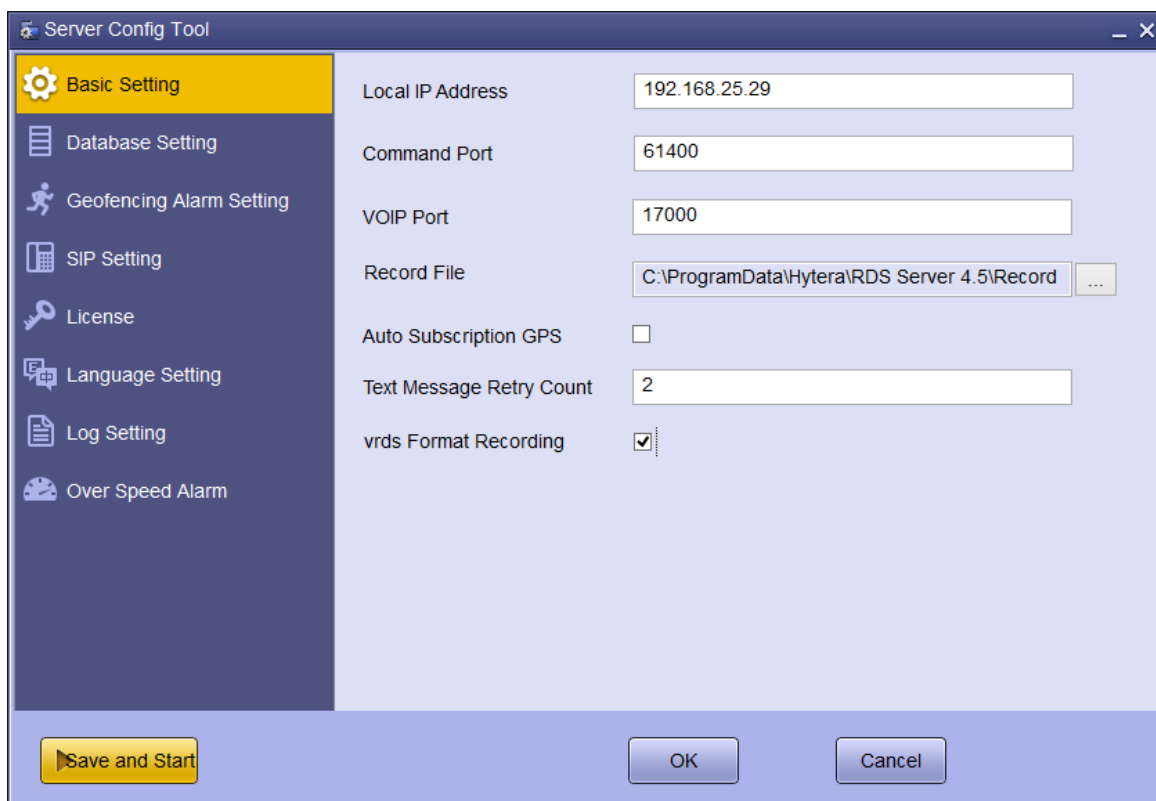
- Rx:**
 - Receive Frequency [MHz]: 450.000000
 - Rx CTCSS/CDCSS Type: None
 - CTCSS: 67.0
 - CDCSS: 023
 - Rx Signaling System: None
- Offset [MHz]:** 0.000000
- Tx:**
 - Transmit Frequency [MHz]: 450.000000
 - Tx CTCSS/CDCSS Type: None
 - CTCSS: 67.0
 - CDCSS: 023
 - Tx Signaling System: System 1

8. Configuring the Smart Dispatch Server

Caution

Make sure that your computer is not in the power saving mode; otherwise, the Smart Dispatch service will be stopped, resulting in system malfunctions.

Right-click the shortcut icon “Hytera Smart Dispatch Server ConfigTool” on the desktop and select “Run as administrator” to enter the following interface.



8.1 Basic Settings

Step 1 Specify the path for saving the recordings and leave the other parameters to their default settings.

Server Config Tool

Basic Setting

Local IP Address: 192.168.25.29

Command Port: 61400

VOIP Port: 17000

Record File: C:\ProgramData\Hytera\RDS Server 4.5\Record

Auto Subscription GPS: ☐

Text Message Retry Count: 2

vrd Format Recording: ☒

Save and Start OK Cancel

Parameter	Description	Example
Local IP Address	Sets the IP address of Smart Dispatch Server. When a dispatch repeater is applied, you must enter the actual IP address of the Server.	192.168.25.29
Command Port	Both the Smart Dispatch Client and Smart Dispatch Gateway access the Smart Dispatch Server via this port.	61400
VOIP Port	Sets the VOIP start port of the Smart Dispatch Server for audio communication. Up to 400 ports are reserved for audio communication. For example, if the start port number is 17000, the port range will be 17000–17399.	17000
Record File	Defines the path for storing the recordings.	D:\Record Files
Auto Subscription GPS	<ul style="list-style-type: none"> Checked: The radio will automatically go on reporting the GPS data after all the dispatchers who are positioning this radio exit their Smart Dispatch. It is easier for the dispatchers to position the radio continuously. Unchecked: The radio will stop reporting its GPS 	checked

Parameter	Description	Example
	information after all the dispatchers who are positioning this radio exit their Smart Dispatch.	
Text Message Retry Count	Sets how many times the Smart Dispatch will automatically resend the message to the radio after the message sending failure.	2
vrds Format Recording	<ul style="list-style-type: none"> Checked: The recording files will be saved in a specified format in which the files can only be played via the Smart Dispatch Client. Unchecked: The recording files will be saved in WAV format, so they can be played via the Smart Dispatch Client and other media players. 	checked

Step 2 Click “OK” to finish.

8.2 Database Settings

Step 1 Click “Database Setting”.

Step 2 Set the following parameters.

Server Config Tool

Basic Setting

Database Setting

Geofencing Alarm Setting

SIP Setting

License

Language Setting

Log Setting

Over Speed Alarm

Server Name: 127.0.0.1

Database Name: RDS

Account: sa

Password: **

Connection Test

Database Import

Database Update

Database Backup

Schedule Backup

Database Restore

Save and Start

OK

Cancel

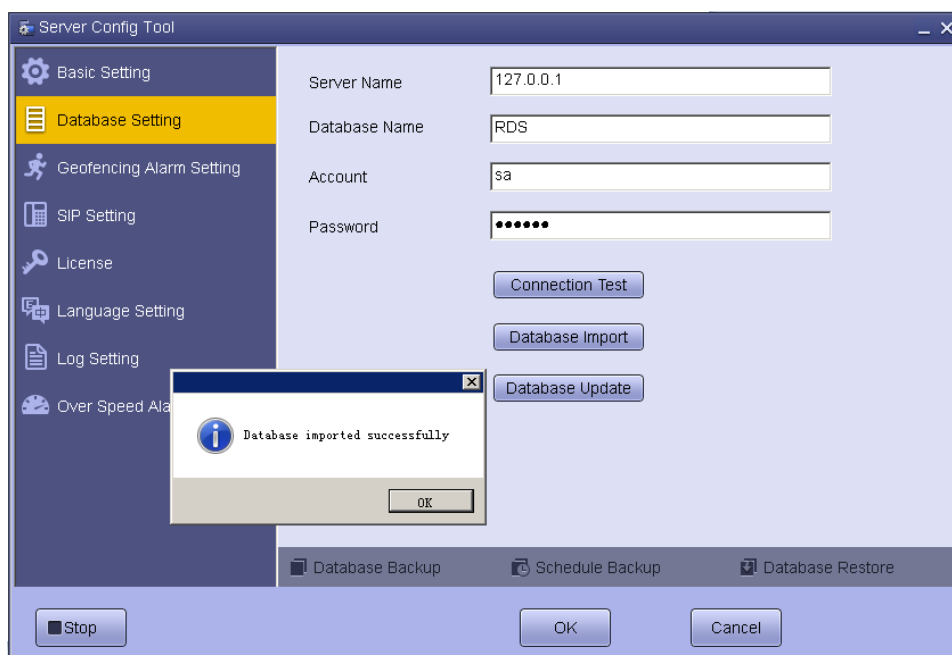
Parameter	Description	Example
Server Name	Sets the name of the database server.	127.0.0.1
Database Name	Sets the alias of the database.	RDS
Account	Sets the database account. Be sure to enter “sa” in this field.	sa
Password	Enters the database password. This password was set during the database installation.	123456

Step 3 Import the data to the database or upgrade the database.

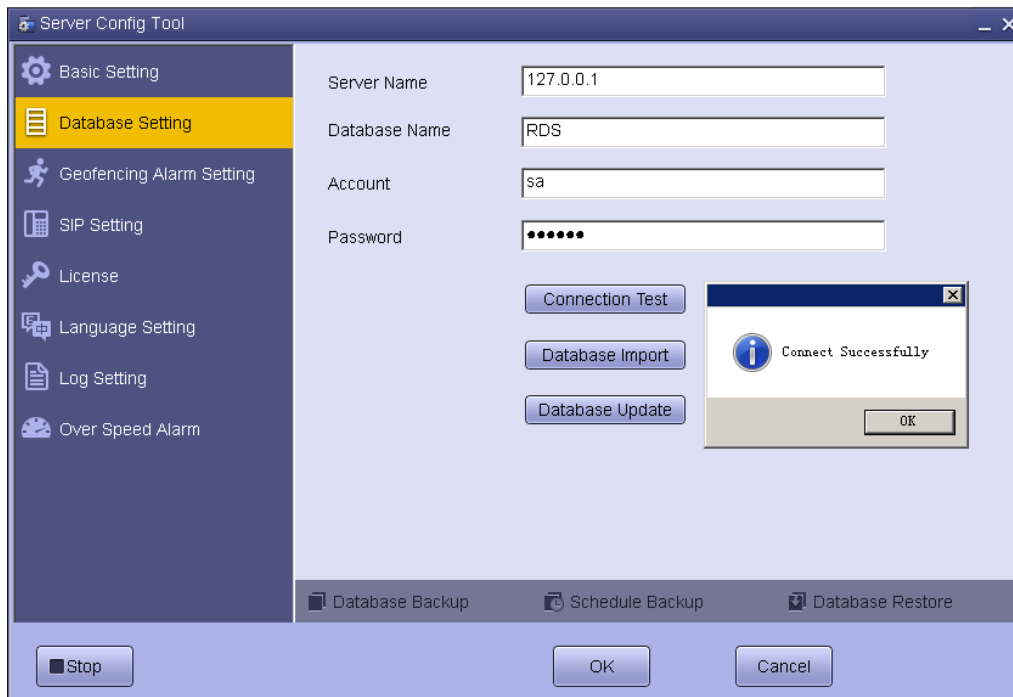
⚠ Caution

You must import the new database or upgrade the existing database to achieve successful connection between the Smart Dispatch Server and the database.

- To use a new database, click “Database Import” to import the Smart Dispatch data to the new database. When the importing is successful, the prompt “Database imported successfully” will appear.
- If you are using a database of an earlier version, you can click “Database Update” to upgrade the database.



Step 4 Click “Connection Test” to check the availability, and then click “OK” on the pop-up window.



Step 5 Click “OK” in the window to finish.

8.2.1 Backing up the Database

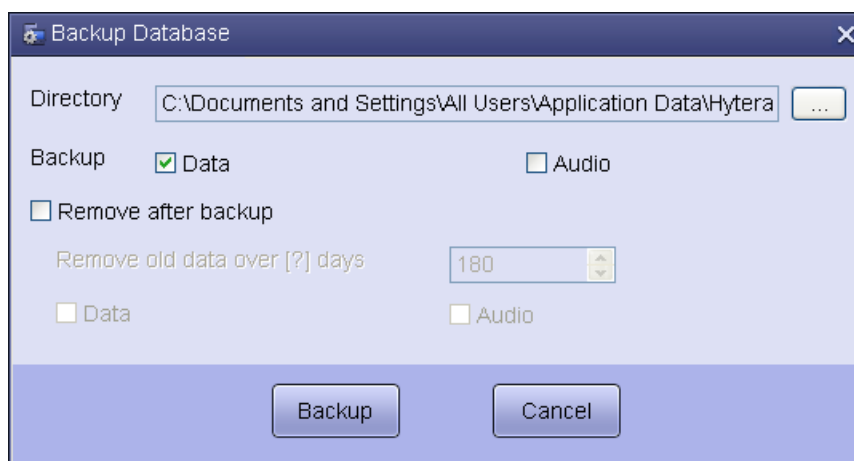
As the database and recording file are vital in the Smart Dispatch system, you should back up them regularly to guard against data loss.

You can schedule the backup to be executed automatically or back up the data manually. The backup file is saved as a .zip file in the designated directory using this format:

Hytera_RDS_BAKyyyymmdd_X.zip” (for example: Hytera_RDS_BAK20150421_0.zip).

- To backup the data manually, do as follows:

Step 1 Click “Database Backup” and set the parameters, finally click “OK” to save your settings.



Parameter	Description
Directory	Specifies the location of the backup file.
Backup	Sets which kind of data you want to back up. You can choose to back up the data or recording file.
Remove after backup	Sets whether to delete the data regularly. After you select this option, you are allowed to set the related parameter. Make sure that the data is backed up and archived properly before you remove it.
Remove old data over [?] days	Enters a value. All data older than the specified days will be removed.
Data	Sets whether to delete the data.
Audio	Sets whether to delete the recording file.

- To back up the data automatically, do as follows:

Step 2 Click “Schedule Backup” and set the parameters, finally click “OK” to save your settings.

Parameter	Description
Directory	Specifies the location of the backup file.

Parameter	Description
Enable Backup	Sets whether the automatic backup is activated. When you select this option, you are allowed to set the related parameter.
Data	Sets whether to automatically back up the data.
Audio	Sets whether to automatically back up the recording file.
Per Month	Specified which days of the month that an automatic backup should occur. This parameter must be work with the “Time” parameter.
Per Week	Specified which day of the week that an automatic backup should occur. This parameter must be work with the “Time” parameter.
Start time	Sets the exact time on the specified day that an automatic backup should start. This parameter must be work with the “Per Month” and “Per Week” parameters.
Remove after backup	Sets whether to delete the data regularly. After you select this option, you are allowed to set the related parameters. Make sure that the data is backed up and archived properly before you remove it.
Remove old data over [?] days	Specify the days. Then all data older than the specified days will be removed.
Data	Sets whether to delete the data.
Audio	Sets whether to delete the recording file.

8.2.2 Restoring the Database



Caution

You must restart the server and log in to the Smart Dispatch Client again after the database is restored.

If the data is lost or the oldest database needs to be restored, you can restore the data from a .zip archive.

Step 1 Click “Database Restore”, and click  to select the backup file.

Step 2 Click “Restore” to restore the database.



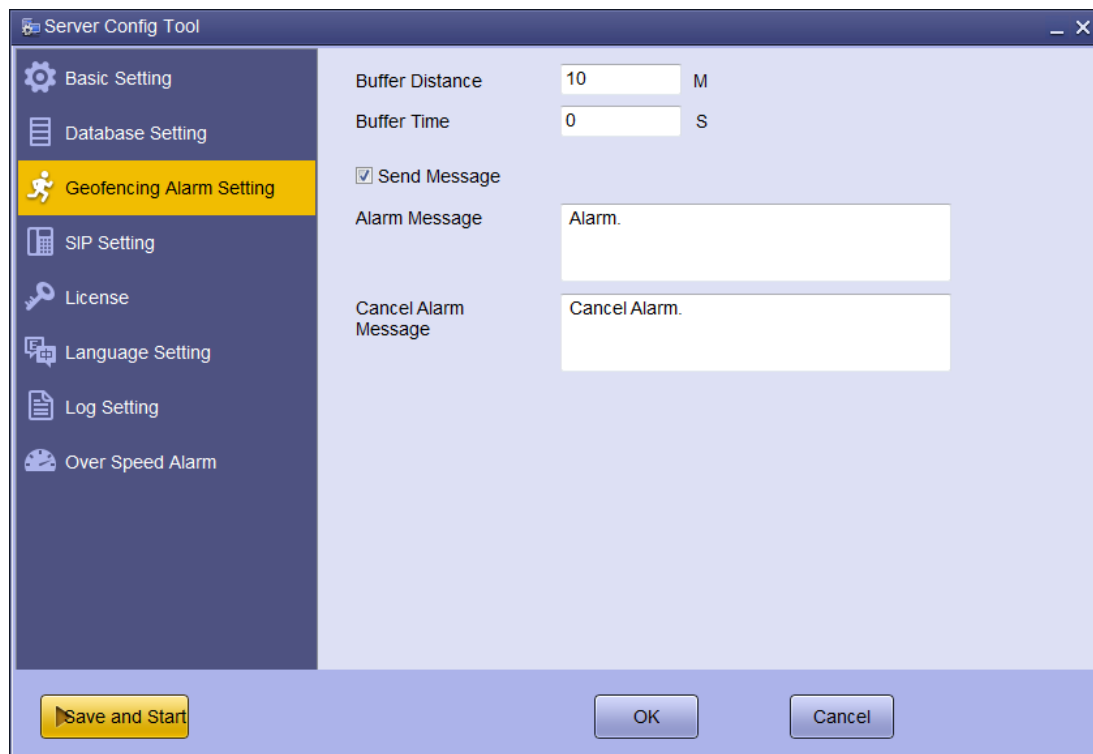
Step 3 Click “Save and Start” to restart the server.

Step 4 Shut down the Smart Dispatch Client and log in to it again to view the recovery data.


8.3 Geofencing Alarm Settings

Step 1 Click “Geofencing Alarm Setting”.

Step 2 Set the following parameters on actual requirements.



Parameter	Description	Example
Buffer Distance	Sets the buffer distance for triggering a geofencing alarm.	0
Buffer Time	Sets the buffer time period for triggering a geofencing alarm.	0

Parameter	Description	Example
Send Message	Sets whether the Smart Dispatch Server will send a message to the radio user when the user leaves the specified area. To enable this feature, select this option; otherwise, deselect it.	
Alarm Message	Edits the message indicating the geofencing alarm. The Smart Dispatch Client will send this message to the subscriber once he/she is out of the designated region.	Alarm.
Cancel Alarm Message	Edits the message indicating canceling of the geofencing alarm. The Smart Dispatch Client will send this message to the subscriber after he/she goes back to the designated region.	Cancel Alarm.

Step 3 Click “OK” to finish.

8.4 SIP Settings

Smart Dispatch can access the telephone switch to communicate with the telephone subscribers. To be specific, the Smart Dispatch Server establishes the SIP connection with the telephone switch, which communicates with the telephone. In this way, Smart Dispatch can communicate with the telephone subscriber. During the SIP connection, it is required to authenticate the account first.

Step 1 Click “SIP Setting” and select the “Enable SIP” option.

Step 2 Set the following parameters.

Server Config Tool

- Basic Setting
- Database Setting
- Geofencing Alarm Setting
- SIP Setting**
- License
- Language Setting
- Log Setting
- Over Speed Alarm

☒ **Enable SIP**

Local Port: 5060

Message Prefix: SIP:

ID: 12345

Password: 123456

Domain: 127.0.0.1:5060

☒ **Auto Register**

Save and Start OK Cancel

Parameter	Description	Example
Enable SIP	Sets whether the SIP telephone can access the Smart Dispatch system. If you select this option, it indicates that this feature is enabled.	checked
Local Port	This port is used by the Smart Dispatch Server to establish connection via the SIP protocol. The remote end is IP-PBX.	5060
Message Prefix	Sets the prefix of the SIP call. If the portable radio initiates a call to the telephone, it will send the message to the Smart Dispatch Client first for call request. This message consists of that prefix and the telephone number.	SIP:
ID	Sets the user name specified in the IP-PBX. For details, please consult your network management administrator.	12345
Password	Sets the password specified in the IP-PBX. For details, please consult your network management administrator.	123456

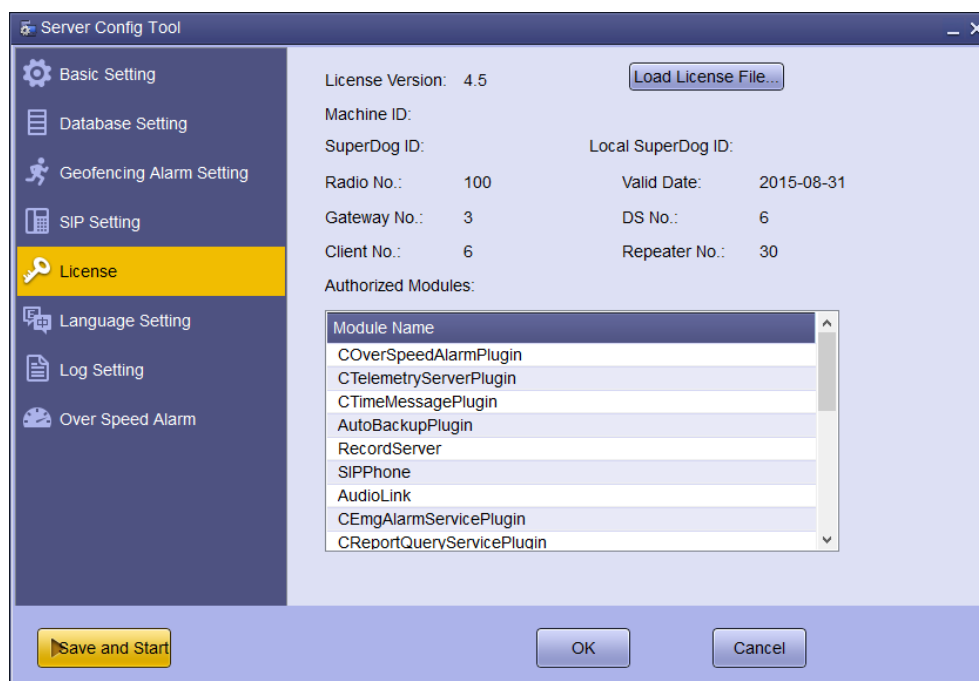
Parameter	Description	Example
	administrator.	
Domain	Sets the IP address of the switch and the port defined for the SIP protocol. For details, please consult your network management administrator.	127.0.0.1:5060

Step 3 Click “OK” to finish.

8.5 License

Click “License” to view the license information.

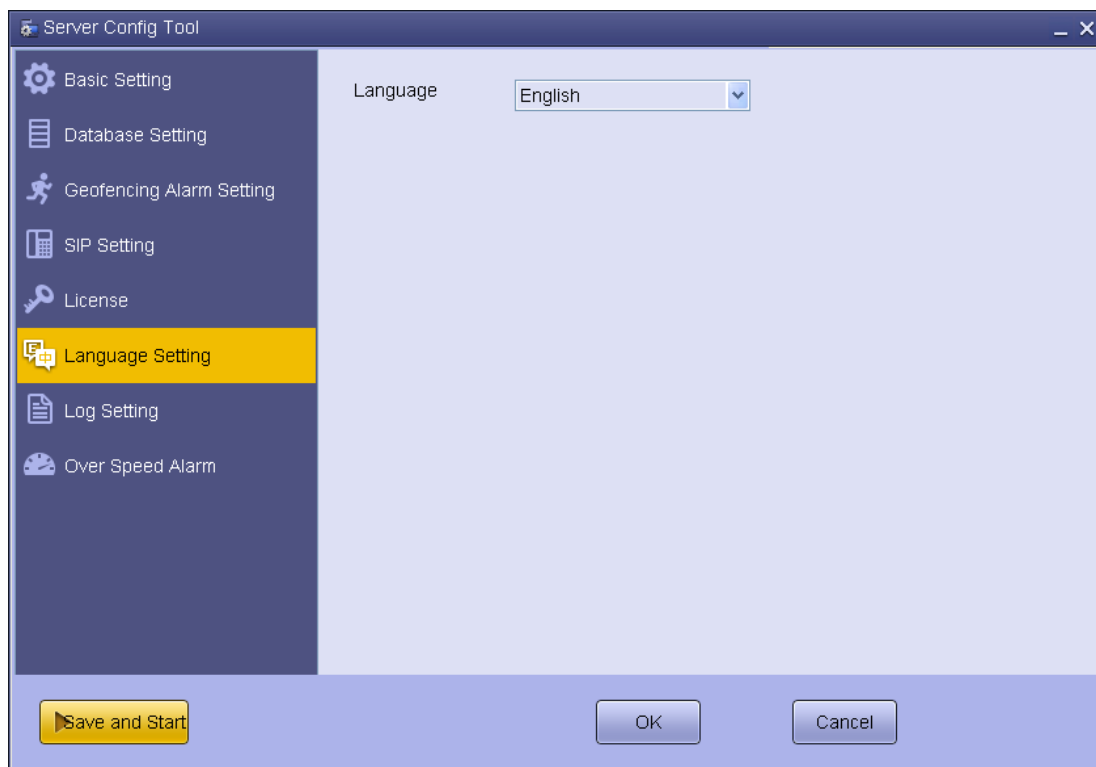
You can have a free trial on this product for three months. For its normal operation, please contact our customer service center to obtain the License, and import your license by clicking “Load License File...” here.



8.6 Language Settings

Step 1 Click “Language Setting”.

Step 2 Select the language.

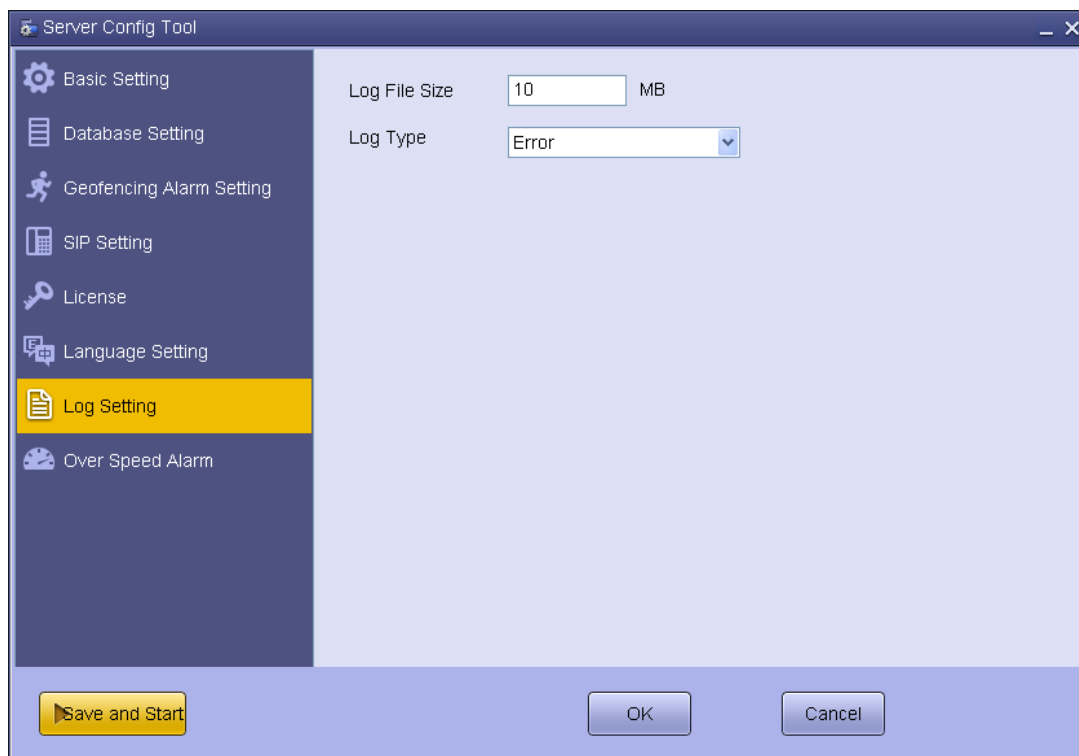


Step 3 Click "OK" to finish.

8.7 Log Settings

Step 1 Click "Log Setting".

Step 2 Set the following parameters as per your actual needs.



Parameter	Description	Example
Log File Size	Sets the maximum size of an individual log file.	10
Log Type	Sets what kind of information will be recorded in the log file. There are four types including System, Error, Warning and Info.	Error

Step 3 Click “OK” to save your settings.

Step 4 Click “Save and Start” to start the server service.

8.8 Over Speed Alarm Settings

Step 1 Click “Over Speed Alarm” and select “Enable”.

Step 2 Set the following parameters as per your actual needs.

The parameters are illustrated in the following table.


Step 3 Click “OK” and then “Save and Start” to start the server service.

Server Config Tool

- Basic Setting
- Database Setting
- Geofencing Alarm Setting
- SIP Setting
- License
- Language Setting
- Log Setting
- Over Speed Alarm**

☒ Enable
 Max Speed: Kilometers per hour
 Buffer Time: S
☒ Send Message
 Alarm Message:
 Cancel Alarm Message:

Parameter	Description	Example
Enable	Sets whether to enable the Over Speed Alarm feature. To enable this feature, select this option; otherwise, deselect it. After you select the option, the following parameters are configurable.	
Max Speed	<p>Sets the speed threshold of the radio movement. Once the radio movement reaches this speed for a certain time period (i.e. the “Buffer Time”), the over speed alarm will be triggered.</p> <p>There are three units for this parameter:</p> <ul style="list-style-type: none"> ● Kilometers per hour; ● Knots per hour; ● Miles per hour. 	120 Kilometers per hour
Buffer Time	Sets the time period before the over-speed radio triggers the over speed alarm. As soon as this period is reached, the alarm will be triggered and the Smart Dispatch Server will send the alarm	0

Parameter	Description	Example
	<p>message to the radio automatically. Accordingly, when the radio slows down to a speed under the threshold for the same time period, the Smart Dispatch Server will send a message to the radio to inform that the alarm is dismissed.</p> <p>Unit: Second</p>	
Send Message	<p>Sets whether the Smart Dispatch Server will send a message to the radio user when the user moves at or over the preset max speed for the specified time period (i.e. "Buffer Time"). To enable this feature, select this option; otherwise, deselect it.</p>	
Alarm Message	<p>Enters the message indicating the over speed alarm. The Smart Dispatch Server will send this message to the user once he/she moves over speed for the specified time period.</p>	Alarm.
Cancel Alarm Message	<p>Enters the message indicating that the over speed alarm is cancelled. The Smart Dispatch Server will send this message to the user when his/her moving speed is below the preset max speed for the specified time period.</p>	Cancel Alarm.

9. Configuring the Smart Dispatch Gateway



Make sure that your computer is not in the power saving mode; otherwise, the Smart Dispatch service will be stopped, resulting in system malfunctions.

To ensure normal operation of the gateway server, connect the USB dog (for license verification) to the Smart Dispatch Server.

Right-click the shortcut “Hytera Smart Dispatch Gateway ConfigTool” on the desktop and select “Run as administrator” to enter the relevant window.

9.1 Basic Settings

Step 1 Click “Basic Setting”.

Step 2 Set the following parameters.

Parameter	Description	Example
Local IP	Sets the IP address of the Smart Dispatch Gateway. When a dispatch repeater is applied, you must enter the actual IP address of the	192.168.25.29

Parameter	Description	Example
	Gateway.	
Local Port	Sets the port for accessing the Smart Dispatch Server.	0
Local VOIP Port	Sets the VOIP start port of the Smart Dispatch Gateway for audio communication. The system will reserve sufficient ports for audio communication. When the Smart Dispatch Gateway is connected to dispatch stations, the number of the reserved ports is twice that of the dispatch stations. For example, if the Smart Dispatch Gateway connects three dispatch stations and the start port number is 19000, the reserved port numbers will be 19000 - 19005. However, when the Smart Dispatch Gateway connects to the repeater, the number of the reserved ports is fourfold that of the repeaters.	19000
GPS Speed Unit of Telemetry	Sets the GPS speed unit for telemetry. Be sure to set it consistent with the GPS speed unit programmed for the target radio.	Kilometers per hour
Auto Stop Unsubscribed GPS	<p>Sets whether the Smart Dispatch system will automatically stop polling the GPS data of the radio(s) when the option "Auto Subscription GPS" is not selected in the Smart Dispatch Server and no dispatcher performs the real-time tracking on the radio(s) which is/are reporting the GPS data.</p> <ul style="list-style-type: none"> ● Checked: The Smart Dispatch system will automatically stop polling the GPS data of the radio(s) when this situation happens. ● Unchecked: The Smart Dispatch system will not automatically stop polling the GPS data of the radio(s). 	checked

Parameter	Description	Example						
Server List	Displays all servers connected to the Smart Dispatch Gateway. One Smart Dispatch Gateway can contain 5 servers at most.	<table><tr><th>IP</th><th>PORT</th></tr><tr><td>192.168.25.29</td><td>61400</td></tr><tr><td></td><td></td></tr></table>	IP	PORT	192.168.25.29	61400		
IP	PORT							
192.168.25.29	61400							
Server IP	Sets the IP address for accessing the Smart Dispatch Server.	192.168.59.40						
Server Port	Sets the port for accessing the Smart Dispatch Server.	61400						

Step 3 Click “Add” to add a server.

If the Smart Dispatch Gateway and Smart Dispatch Server are installed on the same computer, you can skip this step.

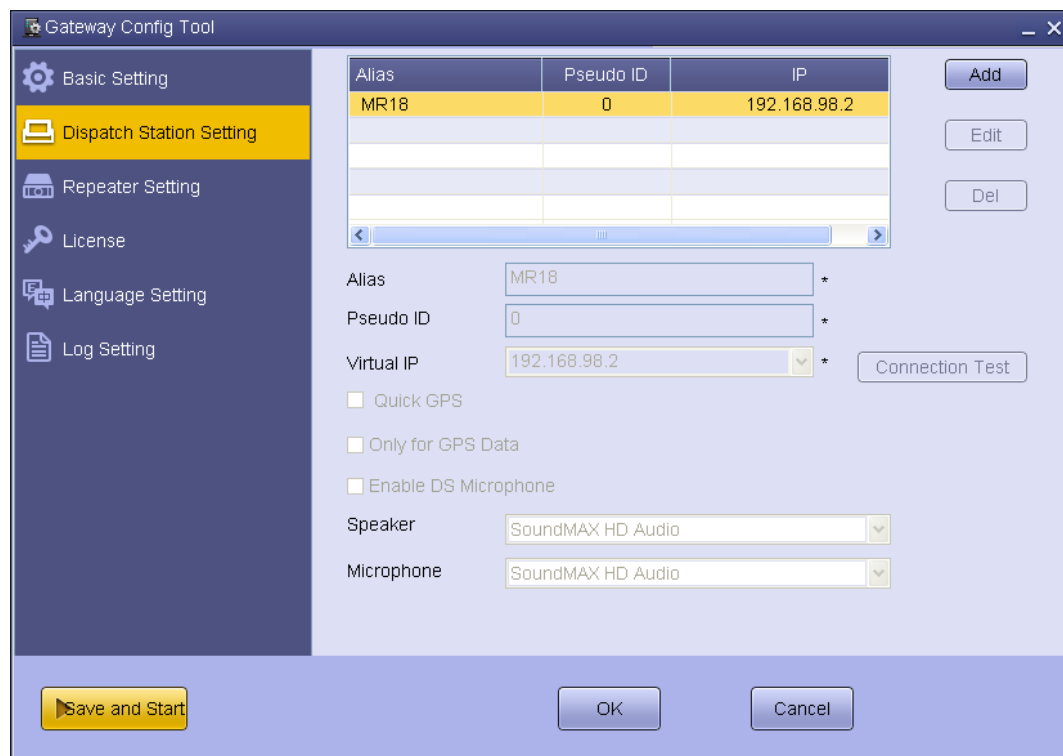
The screenshot shows a configuration window titled "Server List (Contain 5 at most)". It features three buttons at the top: "Add", "Edit", and "Del". On the left is a table with two columns, "IP" and "PORT". The first row contains the values "192.168.25.29" and "61400". Below this are four empty rows. To the right of the table are two input fields labeled "Server IP" and "Server Port". At the bottom right are "OK" and "Cancel" buttons.

Step 4 Click “Save and Start”.

If you make any change in this page, the button will change from “Start” to “Save and Start”

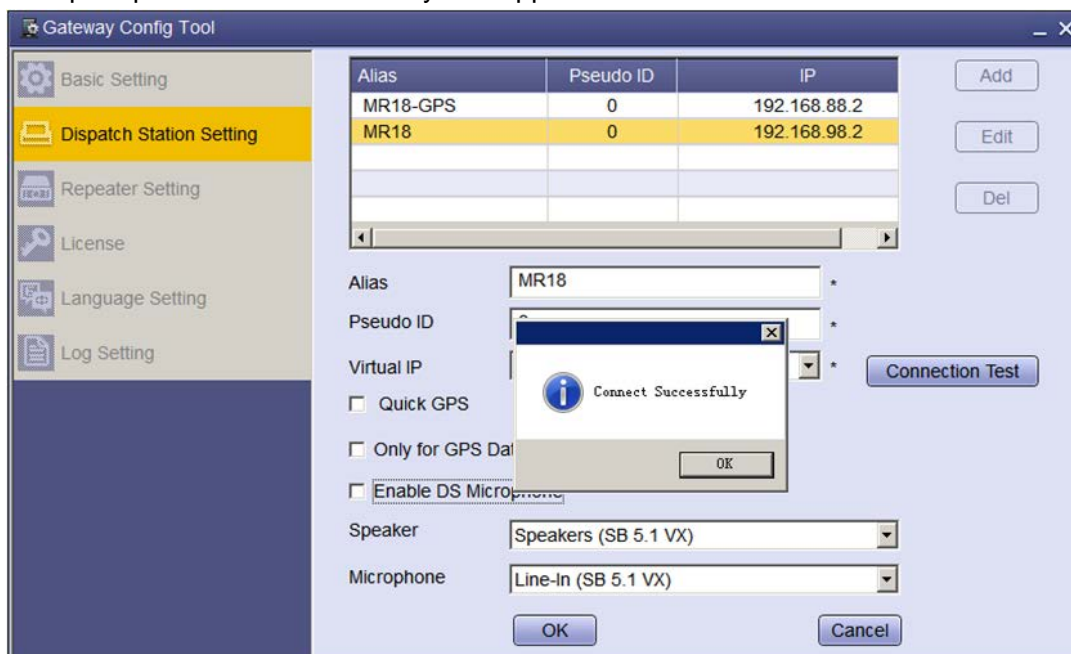
9.2 Dispatch Station Settings

Step 1 Click “Dispatch Station Setting”.


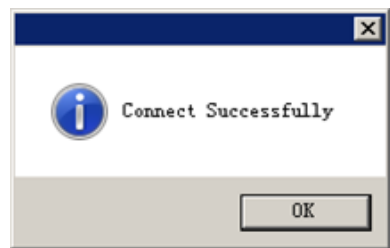





Step 2 Click “Add” and set the following parameter. Click “Connection Test” to test whether the dispatch station is connected properly.

The prompt “Connect successfully” will appear after successful connection.



Parameter	Description	Example
Alias	Sets the alias of the dispatch station. See “3.2	MR7

Parameter	Description	Example
	Radio Planning ".	
Pseudo ID	<p>Sets whether to enable or disable the Pseudo feature. If you set this parameter to 0, it means this feature is disabled. As a result, the voice or data is transmitted on the designated slot.</p> <p>However, if the value is not 0, the pseudo feature will be activated. In this case, either slot 1 or slot 2 is used to transmit the data or voice as long as it is available. Accordingly, the channel utilization is improved. Please note that the Pseudo ID of each repeater must be different.</p>	0
Virtual IP	<p>Sets the virtual IP address of the dispatch station (See "5.1 Basic Settings"). It consists of four sections. The first three sections are consistent with those of the IP address defined in the CPS, while the last section is one greater than that of the IP address.</p> <p>For example, if the dispatch station IP is 192.168.87.1, the virtual IP should be 192.168.87.2.</p>	192.168.87.2
Connection Test	<p>Tests whether the dispatch station is connected properly.</p> <p> Caution</p> <p>Prior to perform the connection test, make sure that the dispatch station has already connected to the computer and been turned on. If this test is failure, the dispatch station can not operate properly. If the port is occupied, the alert message will be given.</p> <p>Thus you must stop the Smart Dispatch</p>	

Parameter	Description	Example
	service first and then make the connection test again.	
Quick GPS	<ul style="list-style-type: none"> ● Checked: the dispatch station will only be used as the quick GPS data station, unable to transmit the audio signal. Then you need to set another dispatch station for audio transmission. Only when the dispatch station is used to transmit quick GPS data can the Smart Dispatch distinguish the quick and normal GPS data. ● Unchecked: the dispatch station will transmit both the audio signal and GPS data. 	
Only for GPS Data	<ul style="list-style-type: none"> ● Checked: the dispatch station will only be used for GPS data transferring, unable to transmit the audio signal. Then you need to set another dispatch station for audio transmission. ● Unchecked: the dispatch station will transmit both the audio signal and GPS data. 	
Enable DS Microphone	<p>Sets whether to enable the microphone.</p> <p>If you use the microphone to talk, only the voice from the microphone will not be recorded. However, the relevant call records involving the microphone still exist.</p>	
Speaker	<p>Sets the name of the speaker.</p> <p>If the “GPS Dispatch Station” option is checked, this option is not available.</p>	Speakers (SB 5.1 VX)
Microphone	<p>Sets the name of the microphone.</p> <p>If the “GPS Dispatch Station” option is checked, this option is not available.</p>	Line-In (SB 5.1 VX)

Step 3 Click “OK” to finish.

9.3 Repeater Settings

Step 1 Click “Repeater Setting” and then click “Add” to add a repeater. Finally click “Save” to save the settings.

Gateway Config Tool

Basic Setting

Dispatch Station Setting

Repeater Setting

License

Language Setting

Log Setting

Advanced Setting

Repeater Setting

Radio ID	Alias	IP Site ID
990	Repeater99	1

Add

Edit

Del

Radio ID: 990 *

Alias: Repeater99 *

IP Site ID: 1 *

Pseudo ID: 0 *

☒ Slot1

Alias: Slot1 *

Subnet ID: 99 *

☐ Quick GPS

Save and Start

OK

Cancel

Gateway Config Tool

Basic Setting

Dispatch Station Setting

Repeater Setting

License

Language Setting

Log Setting

Radio ID: *

Alias: Repeater1 *

IP Site ID: 1 *

Pseudo ID: 0 *

☒ Slot1

Alias: Slot1 *

Subnet ID: 10 *

☐ Quick GPS

☐ GPS Repeater

☐ Local Slot

☐ Encrypt Slot

RTP Type: *

☒ Slot2







Alias: Slot2 *



Subnet ID: 10 *

Save


Cancel

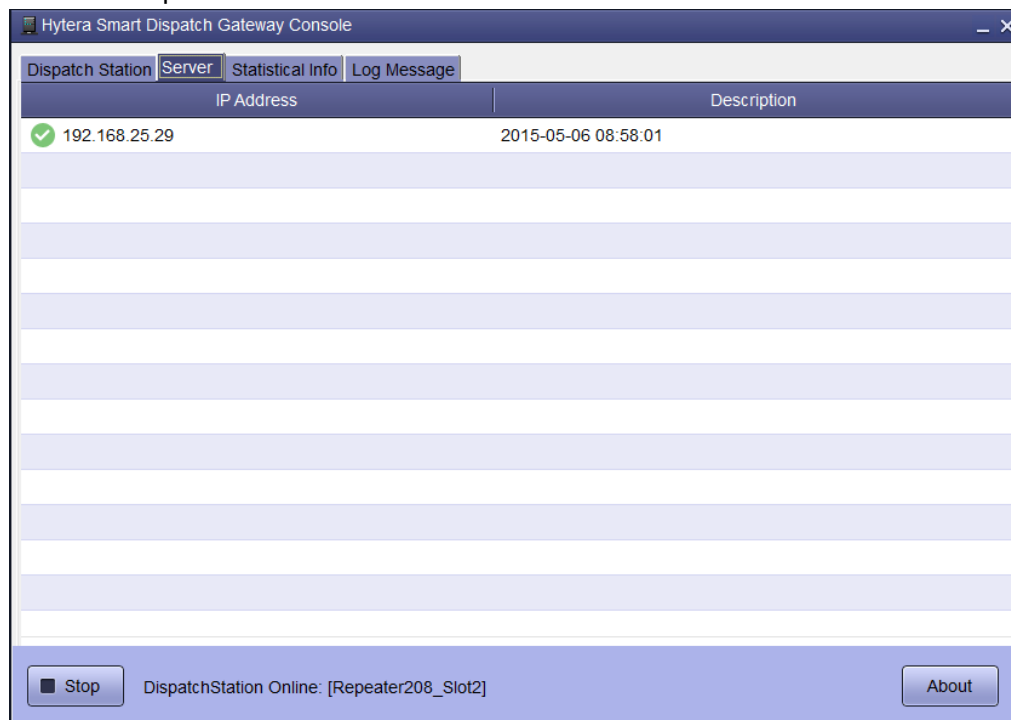
Parameter	Description	Example
Radio ID	Sets the SSI of the repeater.	92
Alias	Sets the alias of the repeater.	Repeater3
IP Site ID	Sets the ID of the IP multi-site network. Each IP Multi-site network has a unique ID. Within the same IP Multi-site network, repeaters in geographically dispersed location can be linked together to exchange the data and voice. In other words, when you send any command to one repeater via Smart Dispatch Client, other repeaters in the same network will also receive it.	1
Pseudo ID	Sets whether to enable or disable the Pseudo feature. If you set this parameter to 0, it means this feature is disabled. As a result, the voice or data is transmitted on the designated slot. However, if the value is not 0, the pseudo feature will be activated. In this case, either slot 1 or slot 2 is used to transmit the data or voice as long as it is available. Accordingly, the channel utilization is improved. Please note that the Pseudo ID of each repeater must be different.	0
Slot1	Slot 1	<input checked="" type="checkbox"/>
Alias	Sets the alias of the slot.	Slot1
Subnet ID	Sets the ID of the repeater. Within the same IP Multi-site network, if the radio wants to communicate with the repeater, their subnet IDs must be identical. However, in the CPS, you are allowed to program the subnet ID for the radio rather than for the repeater. That is why you must set this ID for the repeater here.	21
Quick GPS	<ul style="list-style-type: none"> ● Checked: the slot can only transfer quick GPS data, and another slot is needed to transfer audio signal. Only when the slot is used to transmit quick GPS data can the Smart Dispatch 	<input type="checkbox"/>

Parameter	Description	Example
	distinguish the quick and normal GPS data. <ul style="list-style-type: none"> ● Unchecked: the slot will transfer both audio signal and GPS data. 	
GPS Repeater	If you select this option, the slot is in charge of transmitting the GPS data. Otherwise, this slot is used to transmit the audio signal.	
Local Slot	The slot is only used for local data transmission.	
Encrypt Slot	This option must be selected if you need to encrypt the voices. Be sure to set "RTP Type" to "RTP_SELFP".	
RTP Type	Sets the audio format for transmission. Be sure to set it to "RTP_SELFP".	RTP_SELFP
Slot2	Slot 2	
Alias	Sets the alias of the slot.	Slot2
Subnet ID	Sets the ID of the repeater. Within the same IP Multi-site network, if the radio wants to communicate with the repeater, their subnet IDs must be identical. However, in the CPS, you are allowed to program the subnet ID for the radio rather than for the repeater. That is why you must set this ID for the repeater here.	21
Quick GPS	<ul style="list-style-type: none"> ● Checked: the slot can only transfer quick GPS data, and another slot is needed to transfer audio signal. Only when the slot is used to transmit quick GPS data can the Smart Dispatch distinguish the quick and normal GPS data. ● Unchecked: the slot will transfer both audio signal and GPS data. 	
GPS Repeater	<ul style="list-style-type: none"> ● Checked: the slot can only transfer normal GPS data, and another slot is needed to transfer audio signal. 	


Parameter	Description	Example
	<ul style="list-style-type: none"> Unchecked: the slot will transfer both audio signal and GPS data. 	
Local Slot	The slot is only used for local data transmission.	
Encrypt Slot	This option must be selected if you need to encrypt the voices. Be sure to set “RTP Type” to “RTP_SELFP”.	
RTP Type	Sets the audio format for transmission. Be sure to set it to “RTP_SELFP”.	RTP_SELFP

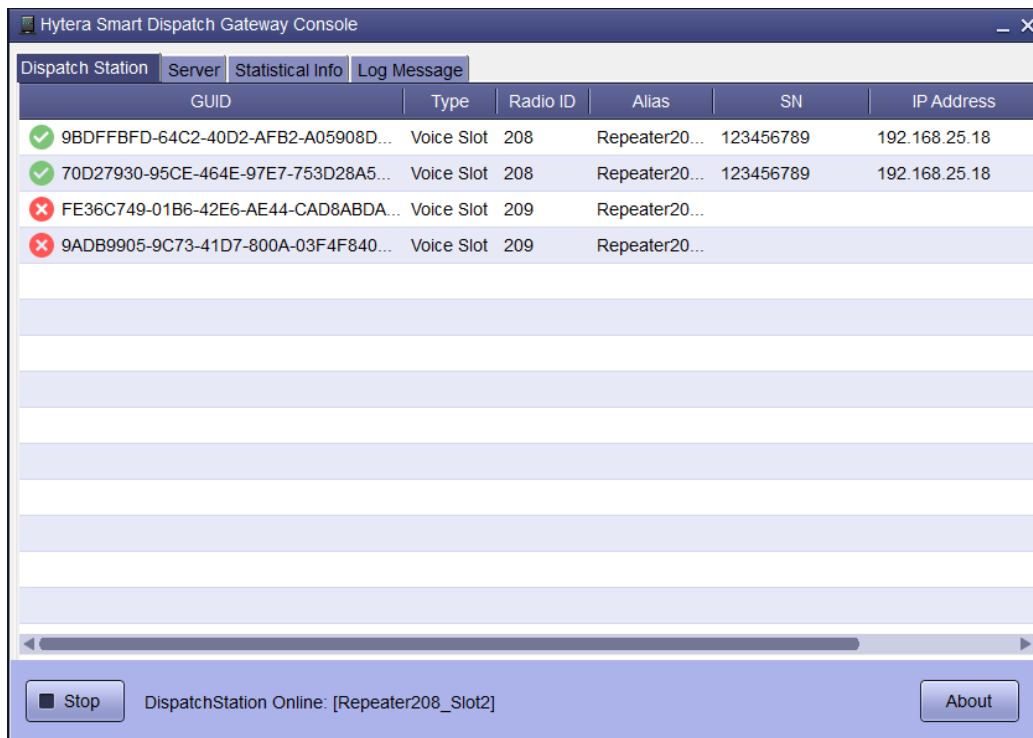
Step 2 Open the “Smart Dispatch Gateway Console” and click the “Server” tab to check the connection between the Smart Dispatch Gateway and Smart Dispatch Server.

If the icon  appears, it indicates successful connection between Smart Dispatch Gateway and Smart Dispatch Server.



Step 3 Click “Dispatch Station” tab to check the connection between the Smart Dispatch Gateway and repeater.

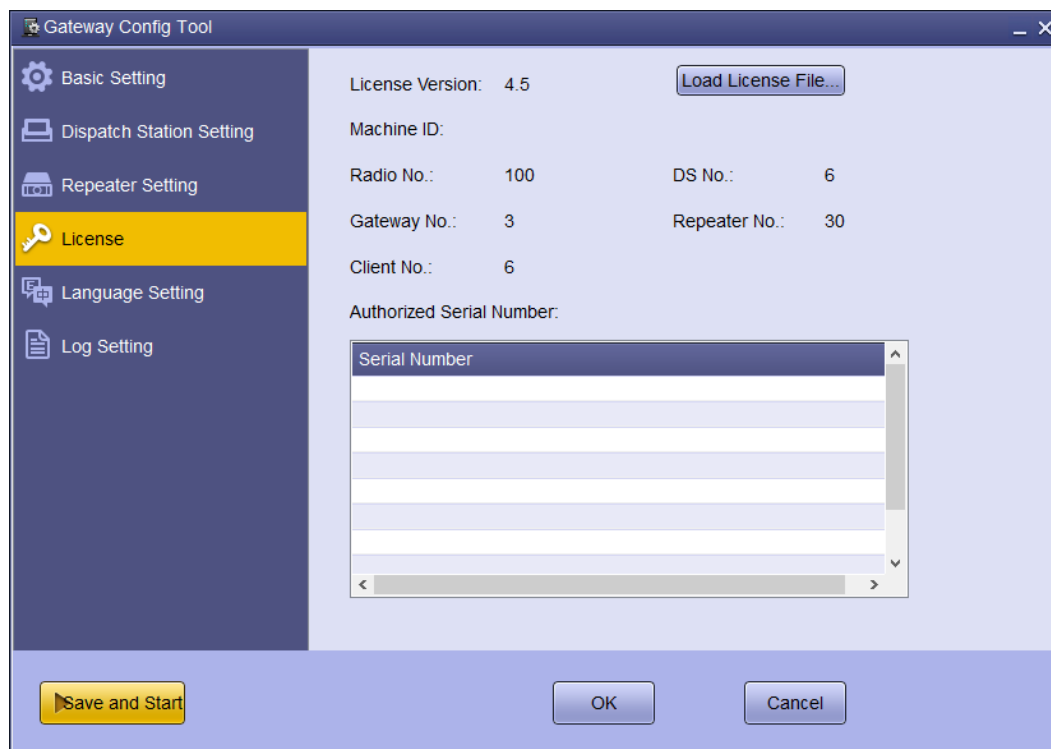
If the icon  appears, it indicates successful connection between the Smart Dispatch Gateway and the repeater.



9.4 License

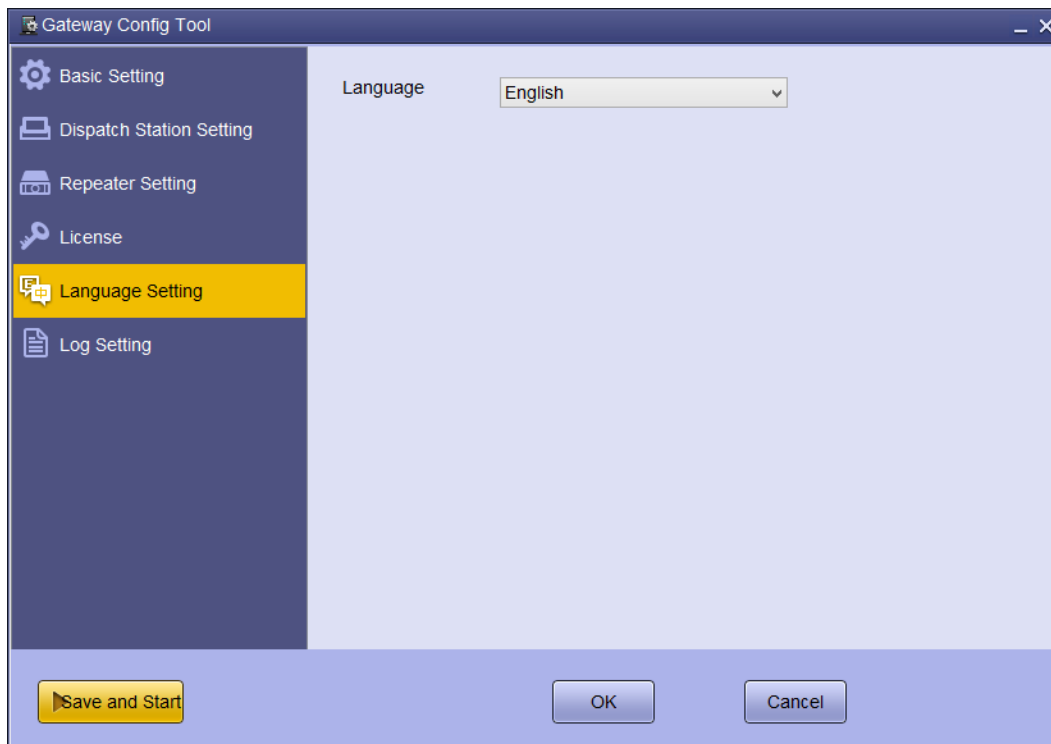
Click "License" to view the license information.

You can have a free trial on this application for three months. For its normal operation, please contact our customer service center to obtain the license, and import your license by clicking "Load License File..." in this interface.



9.5 Language Settings

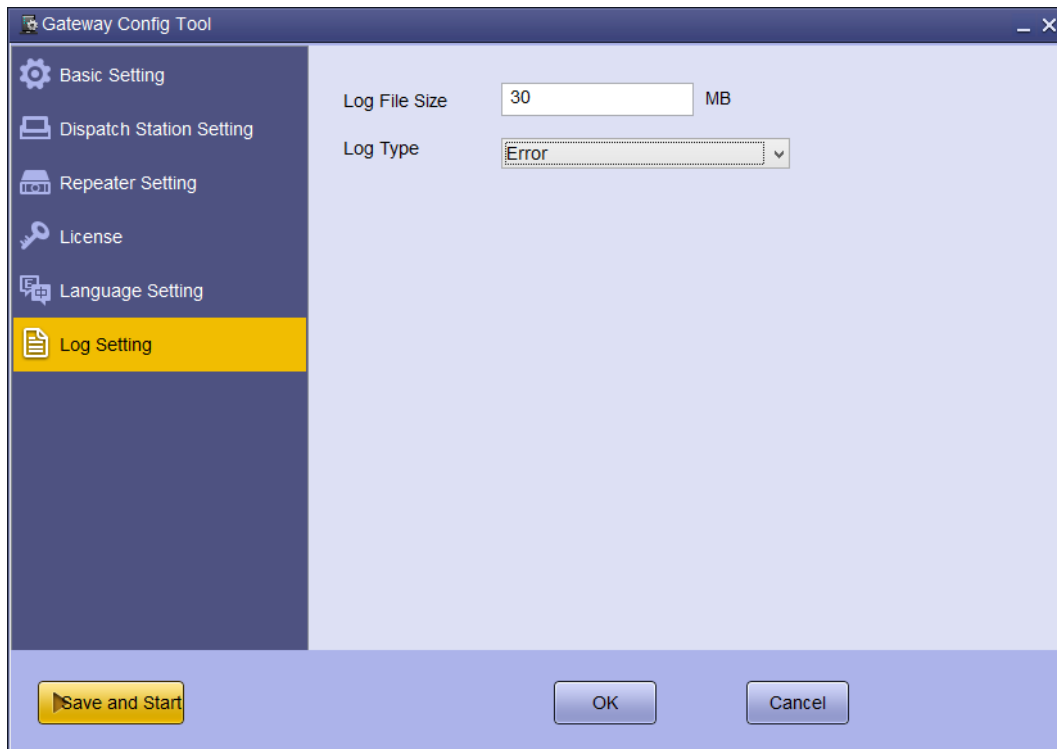
Step 1 Click “Language Setting”.



Step 2 Select the language and click “OK” to finish.

9.6 Log Settings

Step 1 Click “Log Setting”.



Step 2 Set the maximum size of an individual log file and the log type.

Step 3 Click “OK” to finish.

10. Configuring the Smart Dispatch Client




Caution

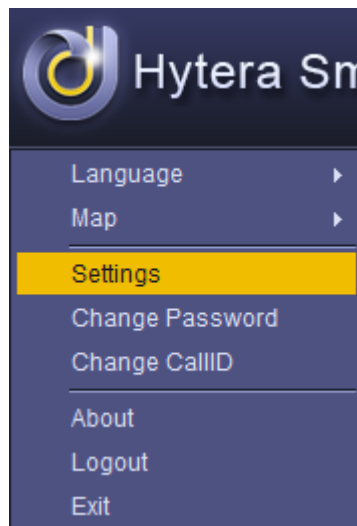
To ensure normal operation of the gateway server, connect the USB dongle (for license verification) to the Smart Dispatch Server.

Only the administrator is allowed to configure the Smart Dispatch Client.

10.1 Setting the Sound Card

It is required to configure the sound card before performing any dispatch task.

Step 1 Click  on the upper left corner of the main interface and select “Settings”.



Step 2 Click “Base Setting” to enter the following interface.

Settings

Base Setting

Call Setting

Map Setting

Log Setting

MuteGroup Setting

Sound Card Setting

Speaker: Headphones (High Definition Aud)

Microphone: Microphone (High Definition Aud)

Right/Left Track

DS Volume: ☐ Left ☒ Right

Intercom: ☒ Left ☐ Right

SIP Call: ☐ Left ☒ Right

Emergency Alarm: ☐ Left ☒ Right

Recording Play: ☐ Left ☒ Right

Subscribers on the map


☒ Show Track

☒ Show Alias

Unit

Meter

Save Cancel

Parameter	Description
Sound Card Setting	
Speaker	<p>Outputs the voice.</p> <p>If the computer that the Smart Dispatch Client is installed on is equipped with the multi-channel sound card, the parameter should be set according to the microphone.</p>
Microphone	<p>Inputs the voice.</p> <p>If the computer that the Smart Dispatch Client is installed on is equipped with the multi-channel sound card, the parameter should be set according to the speaker.</p> <p> Note</p> <p>In the Windows 7, the appropriate option will appear after the microphone is connected properly.</p>
Right/Left Track	

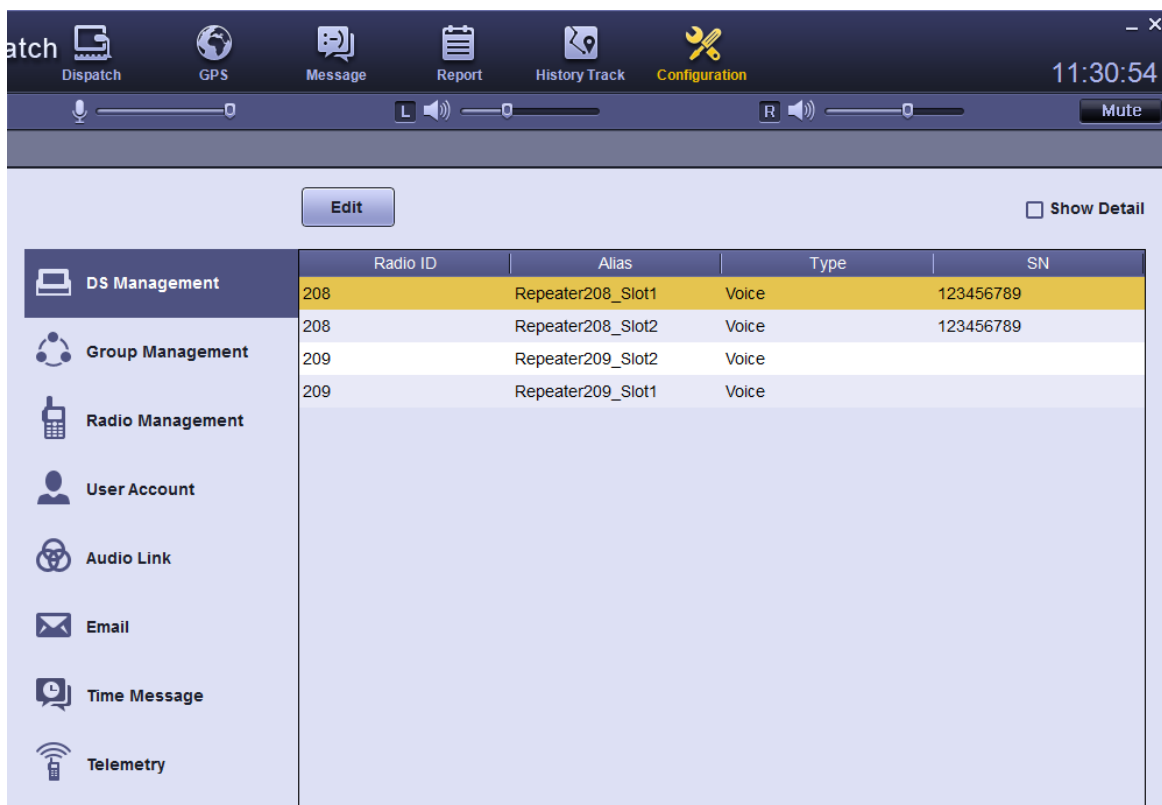
Parameter	Description
DS Volume	Sets the track to output the voice of the dispatch station.
Intercom	Sets the track to output the voice for dispatcher intercommunication.
SIP Call	Sets the track to output the voice during SIP call.
Emergency Alarm	Sets the track to output the voice of the emergency alarm.
Recording Play	Sets the track to output the voice of a call recording when being played.
Subscribers on the map	
Show Track	Sets whether the movement track of the radio is displayed on the map in the process of real-time tracking.
Show Alias	Sets whether the alias of the radio is displayed on the map in the process of GPS positioning and real-time tracking.
Unit	Sets the length unit to be used when measuring the distance on the map. Select the unit on your actual needs.

Step 3 Click “Save” to finish.

10.2 Setting the Dispatch Station/Repeater

You can change the volume or position information of the dispatch station/repeater, modify the channel alias, and specify the available workgroup.

Step 1 Click “Configuration” on the top of the main interface.

**Tip**

To view all information quickly, select “Show Detail” in the upper right corner of the interface.

Step 2 Select the dispatch station/repeater and click “Edit”.

Please note that you cannot modify the information of the offline dispatch station/repeater.

The screenshot shows the 'Edit' window for a radio station in the Smart Dispatch Client. The interface includes a sidebar with navigation options: DS Management, Group Management, Radio Management, User Account, Audio Link, Email, Time Message, and Telemetry. The main area displays a table of radio stations and a detailed configuration panel for the selected station (ID 208).

Radio ID	Alias	Type	SN
208	Repeater208_Slot1	Voice	123456789
208	Repeater208_Slot2	Voice	123456789
209	Repeater209_Slot2	Voice	
209	Repeater209_Slot1	Voice	

Station Details:

- ID: 208
- Alias: Slot1
- Type: Voice
- SN: 123456789
- Version: A6.05.10.104.CAI
- Recording Volume: ☐ Normal ☐ High ☐ Higher ☒ Highest
- Playing Volume: ☐ Normal ☐ High ☐ Higher ☒ Highest

RepeaterInfo:

- RepeaterAlias: Repeater208
- IPSiteID: 1
- SlotID: 1

Position:

- Longitude:
- Latitude:

Available Channel:

Available Workgroup:

Buttons: Save, Cancel

Step 3 Set the following parameters: “Recording Volume”, “Playing Volume” and “Position”.

After you set the longitude and latitude of the dispatch station, you can view this dispatch station on the map and directly call it.

Step 4 Change the alias of the available channel.

The screenshot shows the 'Available Channel' configuration window. It displays a list of channels with the selected channel 'Chann 1' highlighted. The alias for this channel is 'Ch1_Z1'.

Channel	Alias
Chann 1	Ch1_Z1

Step 5 Assign the available workgroup to the dispatch station/repeater.

Available Workgroup

☐ All group

☐ All Call
 ☐ G83
 ☒ G18
 ☐ G99
 ☐ g30

Step 6 Click “Save” to finish.

10.3 Setting the Group

You can define the workgroup and organization block. The former aims at grouping all radios for group call, while the latter can sort all radios by membership for quick search.

Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Group Management”.

Add

Edit

Del

☐ Show Detail

DS Management

Group Management

Radio Management

User Account

Workgroup	Org. Block
Group ID	Alias
21	g21
44	g23
45	g24
46	g25
47	g26
48	g27

Adding a group

Step 1 Click the “Workgroup” tab.

Step 2 Click “Add”.

The screenshot displays the Smart Dispatch Configuration Client interface. On the left is a vertical navigation menu with icons and labels for: DS Management, Group Management (selected), Radio Management, User Account, Audio Link, Email, Time Message, and Telemetry. Below this menu is a 'Batch Add' section with 'Template', 'Import', and 'Export' options. The main area at the top has 'Add', 'Edit', and 'Del' buttons, and a 'Show Detail' checkbox. Below these are two tabs: 'Workgroup' and 'Org. Block'. Under the 'Workgroup' tab is a table with columns 'Group ID', 'Alias', and 'Description'. The table contains two rows: one with '66' and 'G66', and another with '2001' and 'G2001' (highlighted in yellow). Below the table are input fields for 'Group ID', 'Alias', and 'Description', each with an asterisk indicating a required field. At the bottom right of the main area is an 'Activate Windows' watermark. At the very bottom are 'Save' and 'Cancel' buttons.

Group ID	Alias	Description
66	G66	
2001	G2001	

Group ID: *

Alias: *

Description:

Save Cancel

Step 3 Enter the group information and click “Save” to finish.

Modifying a group

Step 1 Select the group and click “Edit”.

Buttons: Add, Edit, Del, Show Detail (checked)

Group ID	Alias	Description
66	G66	
2001	G2001	

Form fields:

- Group ID: 66 *
- Alias: G66 *
- Description:

Buttons: Save, Cancel

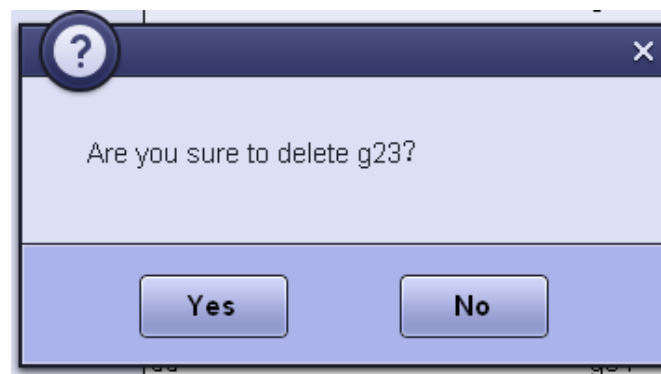
Step 2 Modify the group information and click “Save” to finish.

Deleting a group

Step 1 Select the group and click “Del”.

Step 2 Click “Yes” in the pop-up dialog to finish.

You are only allowed to delete the empty group which contains no radio.



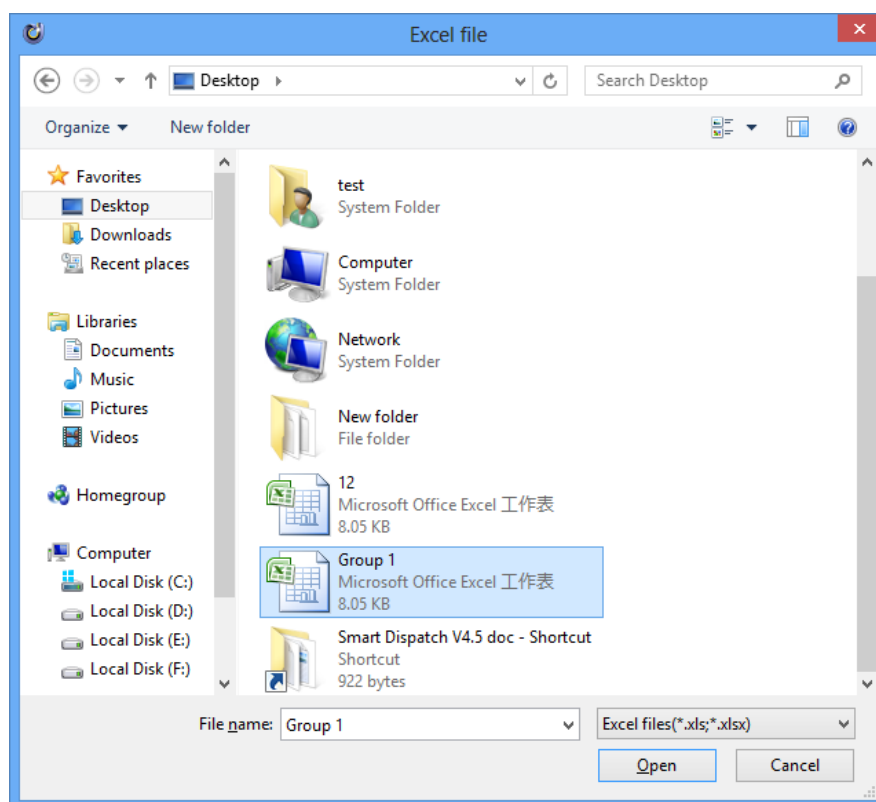
Adding Multiple Groups Simultaneously

Step 1 Click “Template” and open the template shown as below.

	A	B	C
1	Group ID(1-16776415)	Alias	Description
2			
3			
4			

Step 2 Edit the group information in the Excel and save it.

Step 3 Click “Import” and select this saved Excel file.



Step 4 Click “Open” to import the group information.

Exporting the Group Information


For example, the existing workgroup information is as shown below.

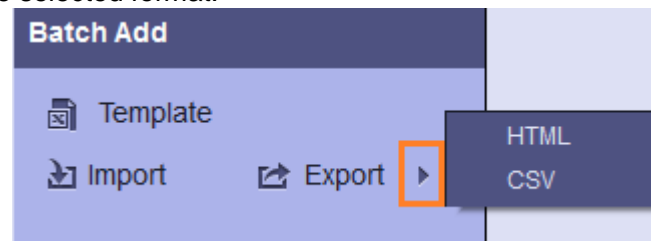
Workgroup	Org. Block	
Group ID	Alias	Description
11	11	11111
100	100	100

Step 1 Click “Export” and export the workgroup information to the Excel file.

	A	B	C
1	Group ID	Alias	Description
2	11	11	11111
3	100	100	100
4			

Note

You can also export the workgroup information in HTML or CSV format. To do so, click  beside “Export” and select the desired format, as shown below. Then the exported file will pop up in the selected format.



10.4 Setting the Radio

You can add a radio to the Smart Dispatch system for dispatch purpose.

Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Radio Management”.

The screenshot shows the 'Radio Management' section of the Smart Dispatch Configuration Guide. The interface includes a sidebar with navigation options: DS Management, Group Management, Radio Management (selected), User Account, Audio Link, Email, Time Message, Telemetry, and Encryption. At the top, there are buttons for 'Add', 'Edit', and 'Del', and a checkbox for 'Show Detail'. The main area displays a table with the following data:

Radio ID	Alias	Description	Workgroup
30021	30021	00	g21
30022	30022	000	g21
30023	30023		g21
30024	30022		g21
30025	30021	021	g21
30026	30022		g21

Below the table, there is a 'Batch Add' section with options for 'Template', 'Import', and 'Export'.

Adding a radio

Step 1 Click “Add”.

The screenshot shows the 'Radio Management' section of the Smart Dispatch Configuration Guide, with the 'Add' button selected. The interface includes a sidebar with navigation options: DS Management, Group Management, Radio Management (selected), User Account, Audio Link, Email, Time Message, Telemetry, and Encryption. At the top, there are buttons for 'Add', 'Edit', and 'Del', and a checkbox for 'Show Detail'. The main area displays a table with the following data:


Radio ID	Alias	Description	Workgroup
5501	P5501		G66
6601	P6601		G66
6602	P6602		G66
6603	P6603		G66

Below the table, there is a 'Batch Add' section with options for 'Template', 'Import', and 'Export'. The 'Add' form is displayed, showing the following fields:

- Radio ID**: Text input field.
- Alias**: Text input field.
- Radio Type**: Radio buttons for Digital (selected) and Analog HDC1200.
- Icon**: Dropdown menu.
- Description**: Text input field.
- RRS Period**: Text input field with a unit selector (Sec).
- Workgroup**: Dropdown menu.
- Org. Block**: Dropdown menu.
- With GPS Module**: Check box.
- Enable GPS**: Check box.
- Time**: Radio button.
- Or**: Radio button.
- And**: Radio button.
- Distance**: Check box.
- 120**: Text input field with a unit selector (Sec).
- 100**: Text input field with a unit selector (Meter).
- With Display Module**: Check box.
- Telemetry**: Check box.

At the bottom, there are 'Save' and 'Cancel' buttons.

Buttons: Add, Edit, Del, Show Details (checked)

Radio ID	Alias	Description	Workgroup								
<div>  <div> <p>Basic Information</p> <p>Telemetry</p> <table border="1"> <thead> <tr> <th>Enable</th> <th>VIO Port</th> <th>VIO Alias</th> <th>Rule</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>VIO1</td> <td>VIO1</td> <td> <div>Outgoing</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> open the door <input checked="" type="checkbox"/> Close the door <div>Incoming</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Door's opened <input checked="" type="checkbox"/> Door's closed </td> </tr> </tbody> </table> </div> </div>				Enable	VIO Port	VIO Alias	Rule	<input checked="" type="checkbox"/>	VIO1	VIO1	<div>Outgoing</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> open the door <input checked="" type="checkbox"/> Close the door <div>Incoming</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Door's opened <input checked="" type="checkbox"/> Door's closed
Enable	VIO Port	VIO Alias	Rule								
<input checked="" type="checkbox"/>	VIO1	VIO1	<div>Outgoing</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> open the door <input checked="" type="checkbox"/> Close the door <div>Incoming</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Door's opened <input checked="" type="checkbox"/> Door's closed 								

Buttons: Save, Cancel

Step 2 Set the following parameters.

Parameter	Description
Radio ID	Enters the radio ID specified in the CPS.
Alias	Sets the alias of the radio.
Radio Type	Sets the type of signal that the radio transfers. The options are: <ul style="list-style-type: none"> Digital Analog HDC1200
Icon	Sets how the radio subscriber carries the radio.
Description	Enters the related information of the radio.
RRS Period	Sets the registration interval.
Workgroup	Classifies all radio subscribers according to their task type and working area.
Org. Block	Classifies all radio subscribers according to their job position.

Parameter	Description
With GPS Module	Sets whether the radio is equipped with GPS module. If the radio has the GPS module and this option is selected, you can position or track it.
Enable GPS	After you select the “With GPS Module” option, this option is available. Select this option for positioning or tracking the radio.
Time	Sets the time interval of GPS polling.
Sec	
Or	<p>When you select the “Time” and “Distance” simultaneously, the “Or” and “And” will be available.</p> <ul style="list-style-type: none"> ● Or: indicates that any of the condition is met. In other words, the GPS data is transmitted to the Smart Dispatch system by either time interval or distance interval. ● And: indicates that all conditions are met. In other words, the GPS data is transmitted to the Smart Dispatch system by both time interval and distance interval.
And	
Distance	Sets the distance interval of GPS polling.
Meter	
With Display Module	Sets whether the message is sent to the radio. Please note that you can view the message via the radio with the LCD only. If you do not select it, the message will not be sent to the radio.
Enable	Sets whether to enable the telemetry rule of a VIO port for the radio. To enable the rule, select this option; otherwise, deselect it.
VIO Port	Sets the VIO port number. This number must be consistent with VIO port number of the radio set via the CPS. See the details in “7.5 Telemetry Settings” .
VIO Alias	Sets the alias of the VIO port.
Rule	Sets the rule(s) for the telemetry feature. See the details in “10.9 Telemetry” .

Step 3 Click “Save” to finish.

Modifying a radio

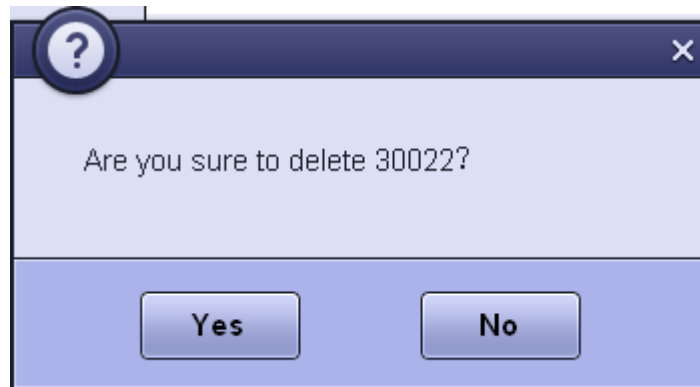
Step 1 Select the radio and click “Edit”.

Step 2 Modify the information and click “Save” to finish.

Deleting a radio

Step 1 Select the radio and click “Del”.

Step 2 Click “Yes” in the pop-up dialog to finish.



Adding Multiple Radios Simultaneously

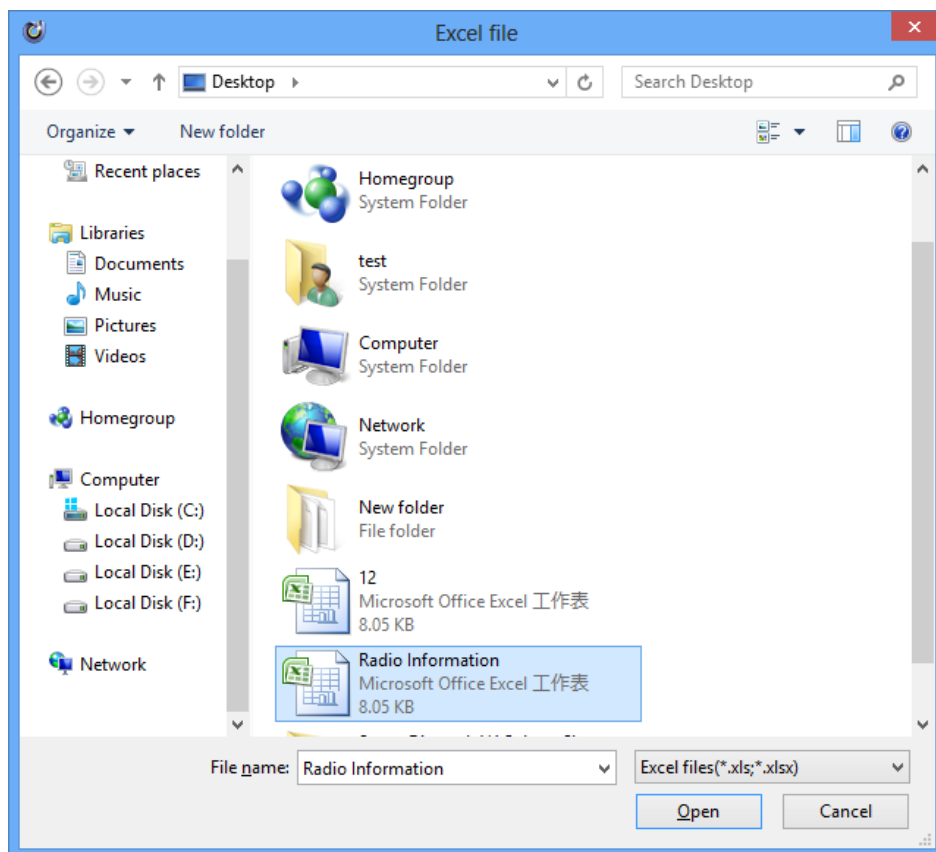
Step 1 Click “Template” and open the template as shown below.

	A	B	C	D	E	F	G
1	Radio ID	Alias	Icon Value	Description	RRS Interval (300-86400sec)	Group ID	With GPS module
2							
3							
4							

H	I	J	K	L
Enable GPS	GPS Upload Type	GPS Interval (1-86400sec)	Distance (100-30000Meter)	With display module

Step 2 Edit the radio information in the Excel and save it.

Step 3 Click “Import”. Then select the saved Excel file.



Step 4 Click “Open” to import the radio information.

Exporting the Radio Information

For example, the existing radio information is as shown below.

Radio ID	Alias	Description	Workgroup
111	radio		11
512	512		11


Step 1 Click “Export” and export the radio information to the Excel file.

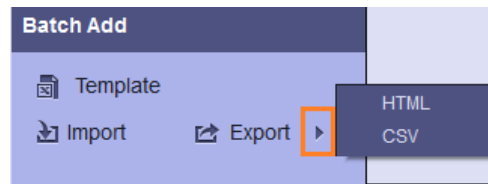
	A	B	C	D	E	F	G
1	Radio ID	Alias	Icon Value	Description	RRS Interval (300-86400sec)	Group ID	With GPS module
2	111	radio	Bike		300	111	Yes
3	512	512	Portable		300	512	Yes
4							

H	I	J	K	L
Enable GPS	GPS Upload Type	GPS Interval (1-86400sec)	Distance (100-30000Meter)	With display module
Yes	Distance	60	100	Yes
Yes	Distance	60	100	Yes



Note

You can also export the radio information in HTML or CSV format. To do so, click  beside “Export” and select the desired format, as shown below. Then the exported file will pop up in the selected format.

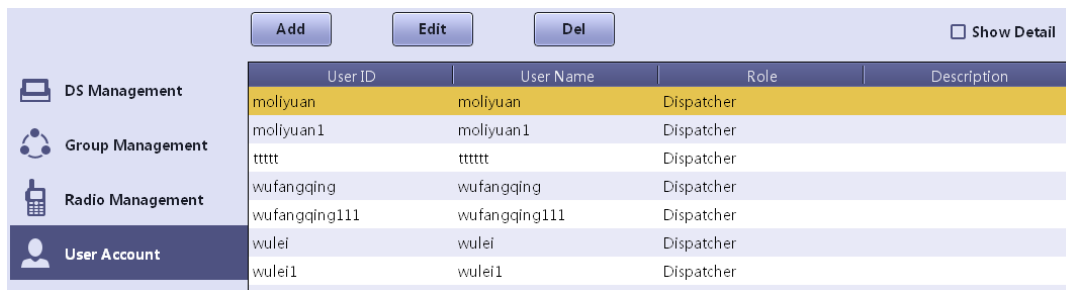


10.5 Setting the User Account

You can add or delete a dispatcher user account, and change the password.

Step 1 Click “Configuration” on the top of main interface.

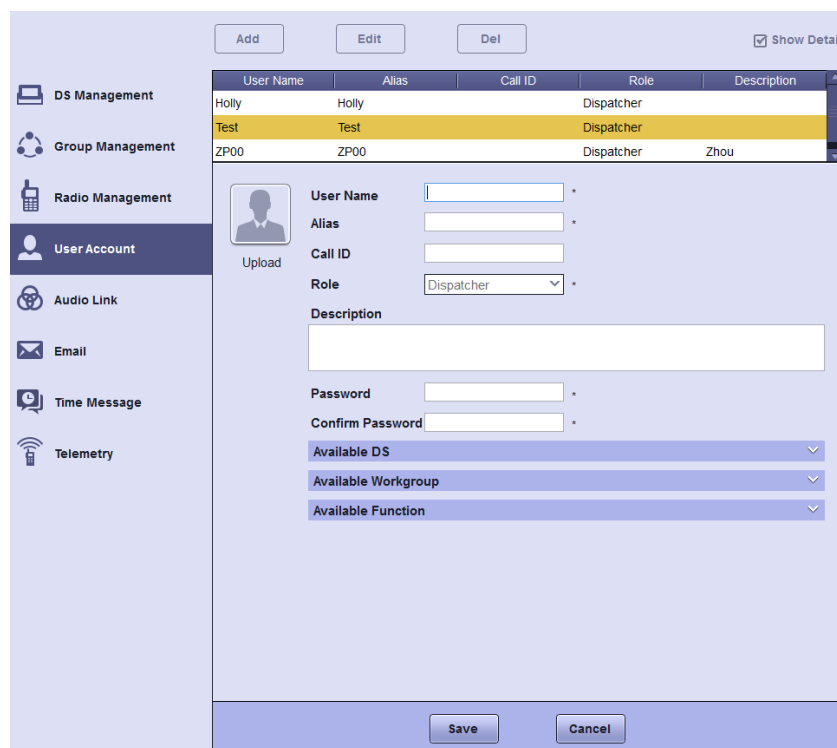
Step 2 Click “User Account”.




User ID	User Name	Role	Description
moliyuan	moliyuan	Dispatcher	
moliyuan1	moliyuan1	Dispatcher	
ttttt	ttttt	Dispatcher	
wufangqing	wufangqing	Dispatcher	
wufangqing111	wufangqing111	Dispatcher	
wulei	wulei	Dispatcher	
wulei1	wulei1	Dispatcher	

Adding a user account

Step 1 Click “Add”.



User Name	Alias	Call ID	Role	Description
Holly	Holly		Dispatcher	
Test	Test		Dispatcher	
ZP00	ZP00		Dispatcher	Zhou



User Name

Alias

Call ID

Role

Description

Password

Confirm Password

Available DS

Available Workgroup

Available Function

Save

Cancel

Step 2 Set the following parameters.

Parameter	Description
User Name	Sets the login user name. It must be unique.
Alias	Sets the alias of the user. You can set it the same with the user name.
Call ID	Sets the call ID of the user.
Role	This option is read-only.
Description	Enters the information related with the account.
Password	Sets the login password.
Confirm Password	Enters the password again for further confirmation.
Available DS	Assigns the available dispatch station to the dispatcher.
Available Workgroup	Assigns the available workgroup to the dispatcher.
Available Function	Assigns the available feature to the dispatcher.

Step 3 Click “Save” to finish.

Modifying a user account

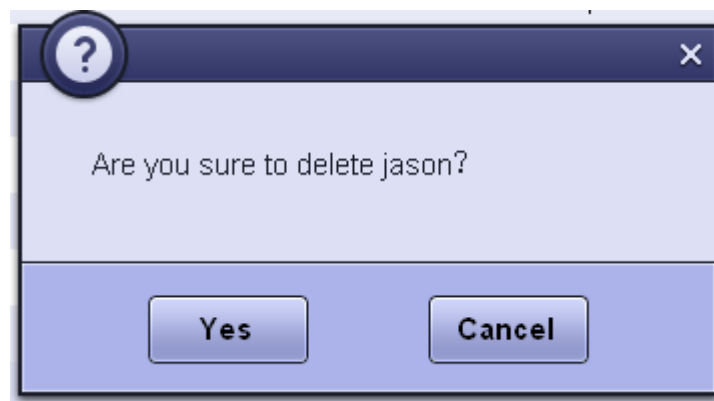
Step 1 Select the account and click “Edit”.

Step 2 Modify the information and click “Save” to finish.

Deleting a user account

Step 1 Select the account and click “Del”.

Step 2 Click “Yes” in the pop-up dialog to finish.



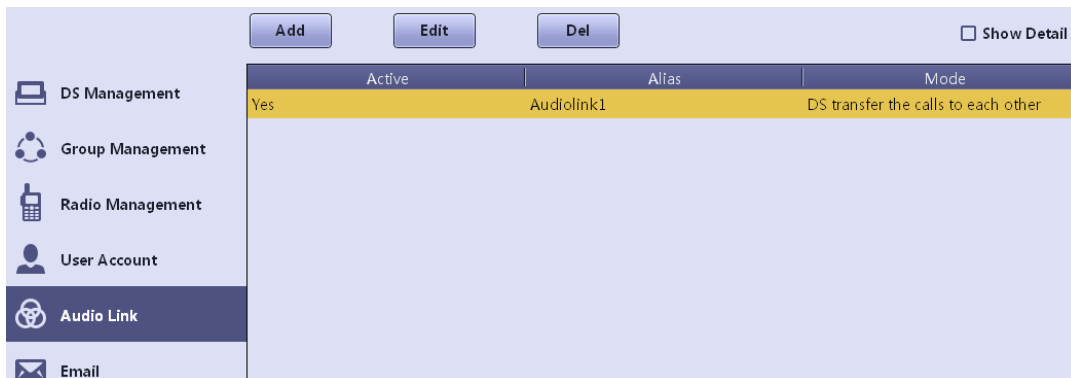
10.6 Setting the Audio Link

You can set the audio link to realize intercommunication among portable radios under different dispatch

stations.

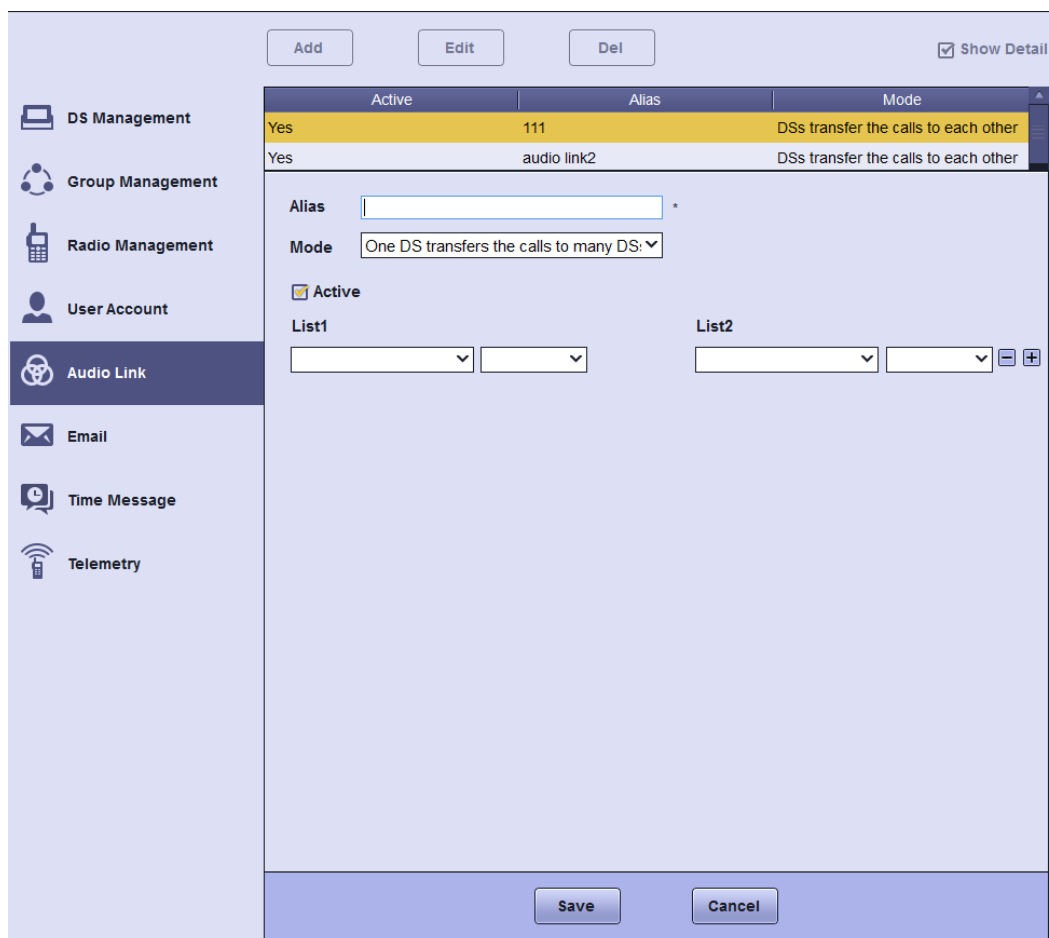
Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Audio Link”.



Adding an audio link

Step 1 Click “Add”.



Step 2 Set the following parameters.

Parameter	Description
Alias	Sets the alias of the audio link.
Mode	Selects the mode for the audio link. Smart Dispatch supports three modes: <ul style="list-style-type: none">● DSs transfer the calls to each other: The radio or group between areas can communicate with each other.● Many DSs transfer the calls to one DS: The call from different dispatch stations in multiple areas can be redirected to one dispatch station in one designated area.● One DS transfers the calls to many DSs: The call from one dispatch station in one designated area can be redirected to multiple dispatch stations in multiple areas.
Active	Sets whether to activate the audio link feature.
List	Sets the dispatch station and group for the audio link.

Step 3 Click “Save” to finish.

Modifying an audio link

Step 1 Select the desired audio link and click “Edit”.

Step 2 Modify the information and click “Save” to finish.

Deleting an audio link

Step 1 Select the desired audio link and click “Del”.

Step 2 Click “Yes” in the pop-up dialog to finish.

10.7 Setting the Email Access

After the email access feature is enabled, you can:

- Open the designated mailbox to view the received and sent messages with the SMTP email service.
- Send the message in the mailbox to the radio or group via the POP3 email service.

Step 1 Click “Configuration” on the top of main interface.

Step 2 Go to “Email -> Edit” to set the parameters.

Edit
Show Detail

- DS Management
- Group Management
- Radio Management
- User Account
- Audio Link
- Email
- Time Message
- Telemetry

SMTP
POP3

☐ Forward the received message
☐ Forward the sent message

Sender

Receiver

SMTP Server IP

SMTP Server Port

☐ Use SSL

SMTP Login Type Normal users

User Name

Password

Send Test Email

Save
Cancel

Edit
Show Detail

- DS Management
- Group Management
- Radio Management
- User Account
- Audio Link
- Email
- Time Message
- Telemetry

SMTP
POP3

☐ Forward email to the radio

POP3 Server IP

POP3 Server Port

☐ Use SSL

POP3 Login Type Normal users

User Name

Password

Check for new emails Sec

Receive Test Email

Save
Cancel

Parameter	Description	Example
SMTP		
Forward the received message	Sets whether to send the received message from the Smart Dispatch system to the designated mailbox.	Select
Forward the sent message	Sets whether to send the sent message to the designated mailbox.	Select
Sender	Sets the mailbox used for sending the e-mail.	a@hytera.com
Receiver	Sets the mailbox used for receiving the e-mail.	b@hytera.com
SMTP Server IP	Sets the IP address of the SMTP server.	192.168.58.22
SMTP Server Port	Sets the port of the SMTP server.	25
Use SSL	Selects whether the SSL is enabled for a secure connection. It is recommended to check this option for higher security. When you set this parameter, you should consider whether the selected mailbox supports the SSL.	Deselected
SMTP Login Type	Sets the account type for logging in to SMTP.	Normal users
User Name	Sets the user name for logging in to the SMTP.	a
Password	Sets the password for logging in to the SMTP.	a
Send Test Email	Verifies the configuration.	Clicks this button to send a test e-mail.
POP3		
Forward email to the radio	Set whether to send the received mail to the radio.	Selected
POP3 Server IP	Sets the IP address of the POP3 server.	192.168.58.22
POP3 Server Port	Sets the port of the POP3 server.	110
Use SSL	Selects whether the SSL is enabled for a	Deselect

Parameter	Description	Example
	secure connection. It is recommended to check this option for higher security. When you set this parameter, you should consider whether the selected mailbox supports the SSL.	
POP3 Login Type	Sets the account type for logging in to POP3 server.	Normal users
User Name	Sets the user name for logging in to POP3 server.	a
Password	Sets the password for logging in to POP3 server.	a
Check for new emails () Sec	Sets the interval for receiving the new email.	60
Receive Test Email	Verifies the configuration.	Clicks this button to send a test e-mail.

Step 3 Click “Save” to finish.

10.8 Time Message

You can configure the message (e.g. meeting invitation) to be sent to the target radio(s) at the predefined time.

Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Time Message”.

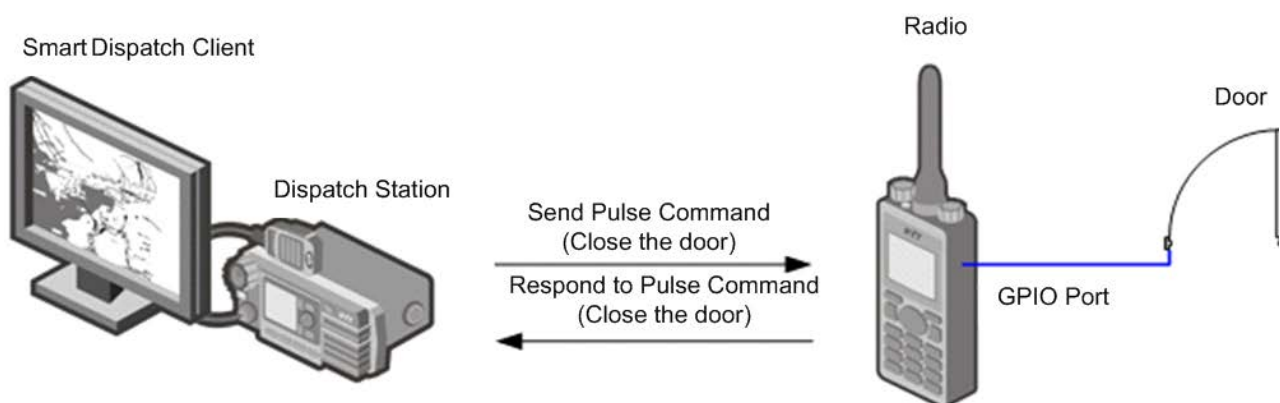
Step 3 Click “Add” and set the message.

The screenshot shows the 'Time Message' configuration window in the Smart Dispatch Client. The left sidebar contains navigation icons for DS Management, Group Management, Radio Management, User Account, Audio Link, Email, Time Message (selected), and Telemetry. The main area has buttons for 'Add', 'Edit', and 'Del' at the top right, and a 'Show Detail' checkbox. Below these is a table with columns 'Content', 'Pattern', and 'Start Time'. The first row shows 'Meeting at 8:15 a.m.', 'Per Week (Mon,Tue,Wed)', and '08:00:00'. Below the table, there are radio buttons for 'Per Month', 'Per Week', and 'Per Day'. The 'Per Week' option is selected, and a 'Day' dropdown is set to '1'. Below these are checkboxes for days of the week (Mon, Tue, Wed, Thu, Fri, Sat, Sun). A 'Start Time' field is set to '08:00:00' with a '(HH:MM:SS)' label. A 'Message Content' text area contains 'Training course at 9 a.m.' with a character count of 230. Below this is a 'Send Terminal' section with a checkbox for 'All' and a tree view showing a hierarchy: G66(66) -> P6603(6603) -> P6601(6601) -> P6602(6602) -> P5501(5501). At the bottom are 'Save' and 'Cancel' buttons.

Step 4 Click “Save” to finish.

10.9 Telemetry

Through the Smart Dispatch Client, you can remotely monitor the status of the external device connected to the radio, as well as controlling it.



To apply the Telemetry feature, you should connect the monitored device to the GPIO port of the radio,

define the telemetry commands (as below) and enable the radio in the following steps to respond the commands (see “[7.5 Telemetry](#)”).

Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Telemetry” and then click “Add” to set a telemetry rule.

The screenshot shows the 'Telemetry' configuration window. On the left is a sidebar with icons for DS Management, Group Management, Radio Management, User Account, Audio Link, Email, Time Message, and Telemetry (which is highlighted). The main panel has buttons for 'Add', 'Edit', and 'Del' at the top right, and a 'Show Detail' checkbox. Below these is a table with the following data:

Direction	Rule	Description
Outgoing	Send Active Voltage Command	open the door
Incoming	Active Voltage	Door's opened
Outgoing	Send Inactive Voltage Command	Close the door
Incoming	Inactive Voltage	Door's closed

Below the table is a form to add a new rule with the following fields:

- Direction:** A dropdown menu currently set to 'Outgoing'.
- Rule:** A dropdown menu currently set to 'Send Inactive Voltage Command'.
- Description:** A text input field.

At the bottom of the form are 'Save' and 'Cancel' buttons.

Parameter	Description
Direction	Sets whether the command is an “Outgoing” or “Incoming” one.
Rule	<p>Sets the rule for the command transferring. The options are dependent on the “Direction”.</p> <ul style="list-style-type: none"> ● Incoming <ul style="list-style-type: none"> ➤ Active Voltage ➤ Inactive Voltage ● Outgoing <ul style="list-style-type: none"> ➤ Send Inactive Voltage Command ➤ Send Active Voltage Command ➤ Send Toggle Voltage Command ➤ Send Pulse Command
Description	Enters the command description.

Step 3 Click “Save” to finish.

10.10 Encryption

To encrypt the voices, you need to set the same encrypt key for the repeater, radio and Smart Dispatch Client, and configure the algorithm in the gateway (See the description of “Encrypt Slot” in “[9.3 Repeater Settings](#)”).

Caution

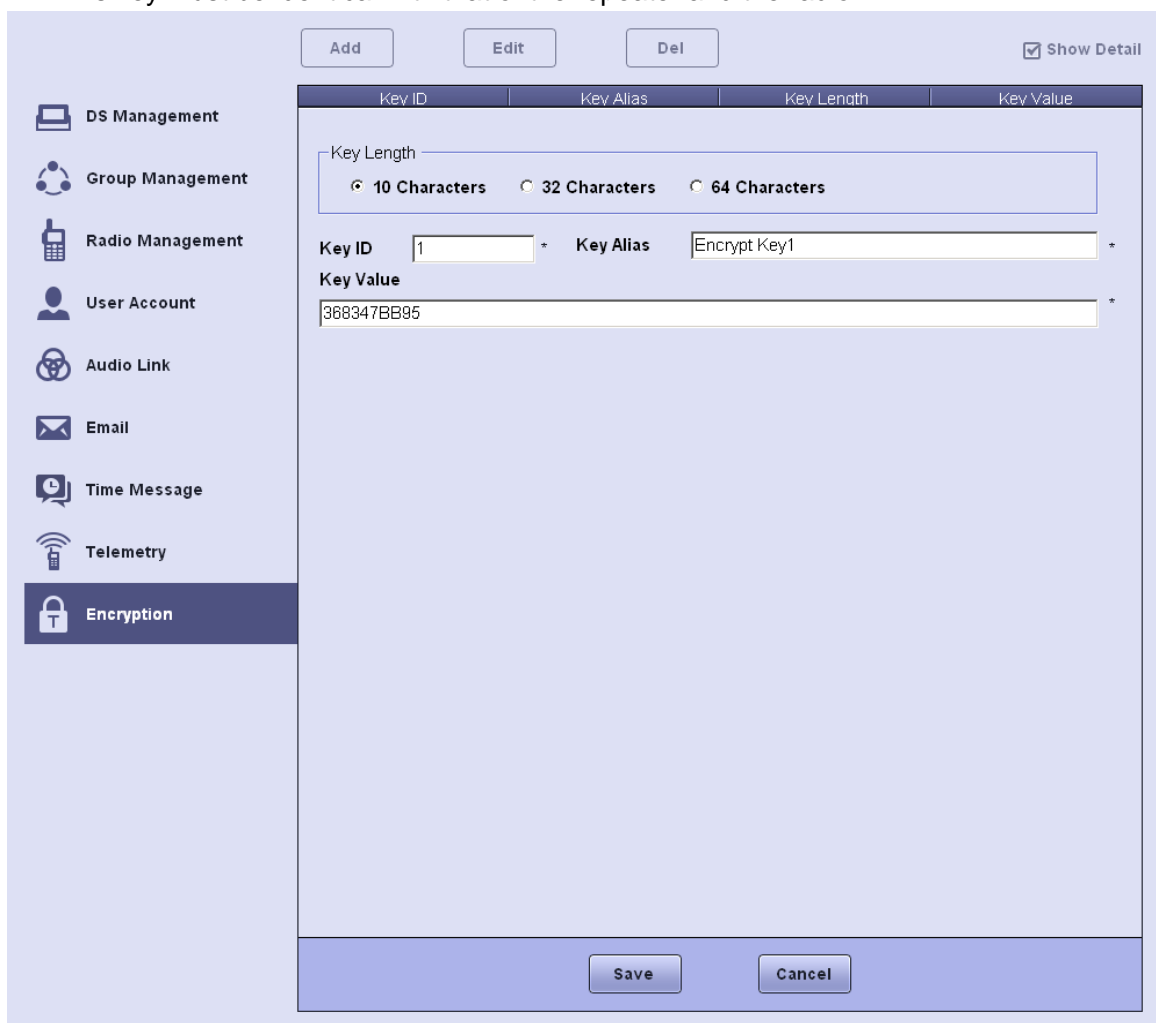
To encrypt the voices, you need to connect the USB dog (for voice encryption) to the Smart Dispatch Client.

Step 1 Click “Configuration” on the top of main interface.

Step 2 Click “Encryption”.

Step 3 Click “Add” and configure the encryption key for the Smart Dispatch Client.

This key must be identical with that of the repeater and the radio.



The screenshot displays the 'Encryption' configuration window. On the left is a sidebar with icons and labels for DS Management, Group Management, Radio Management, User Account, Audio Link, Email, Time Message, Telemetry, and Encryption (which is highlighted). The main area has a top bar with 'Add', 'Edit', and 'Del' buttons, and a 'Show Detail' checkbox. Below this is a table with columns: Key ID, Key Alias, Key Length, and Key Value. The 'Key Length' section has three radio buttons: '10 Characters' (selected), '32 Characters', and '64 Characters'. The 'Key ID' field contains '1'. The 'Key Alias' field contains 'Encrypt Key1'. The 'Key Value' field contains '368347BB95'. At the bottom are 'Save' and 'Cancel' buttons.

Key ID	Key Alias	Key Length	Key Value
1	Encrypt Key1	10 Characters	368347BB95

Parameter	Description
Key Length	Defines the length of the key you enter. Currently there are three options: 10, 32 and 64 characters.
Key ID	The ID must be unique.
Key Alias	The alias must be unique.
Key Value	Be sure to enter the hexadecimal numbers. The length of key value is subject to the settings in the “Key Length”.

Step 4 Click “Save” to finish.

Step 5 Click “DS Management”, select the dispatching repeater and click “Edit”.

The configuration interface will appear.

Step 6 Spread the “Available Channel” field to configure the channel encryption.

This configuration must be consistent with that of the repeater via the CPS.

Step 7 Click “Save” to finish.

11. Commissioning Services

11.1 Commissioning the Online and Offline Service

11.1.1 Online status

Prerequisite

All components in the Smart Dispatch system work properly.

Procedure

Step 1 Turn on the portable radio.

Expected Result

After the portable radio is online, the color of its icon on the Smart Dispatch Client will turn orange.

11.1.2 Offline status

Prerequisite

- All components in the Smart Dispatch system work properly.
- The portable radio is online already.

Procedure

Step 1 Turn off the portable radio.

Expected Result

After the radio is offline, its icon on the Smart Dispatch Client will turn from orange to grey.

11.2 Commissioning the Message Service

Prerequisite

- All components in the Smart Dispatch system work properly.

Procedure

Step 1 Send the message from the Smart Dispatch Client to the portable radio.

Step 2 Send the message from the portable radio to the Smart Dispatch Client.

Expected Result

- The Smart Dispatch Client can receive the message.
- The portable radio can receive the message.

11.3 Commissioning the Call Service

Prerequisite

All components in the Smart Dispatch system work properly.

Procedure

Step 1 Use the portable radio to make a call and the following window appears.

If the call can be established successfully, it indicates that the call service is normal.



Expected Result

- The Smart Dispatch Client can receive the voice from the portable radio.
- The portable radio can receive the voice from the Smart Dispatch Client.

11.4 Commissioning the GPS Positioning Service

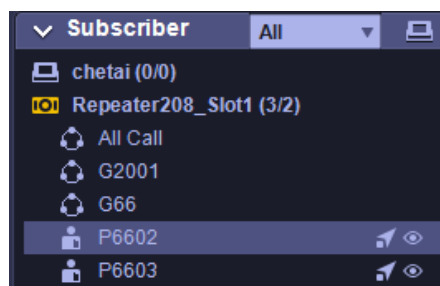
Prerequisite

- All components in the Smart Dispatch system work properly.
- The portable radio with GPS module is online and has searched out the GPS signal.

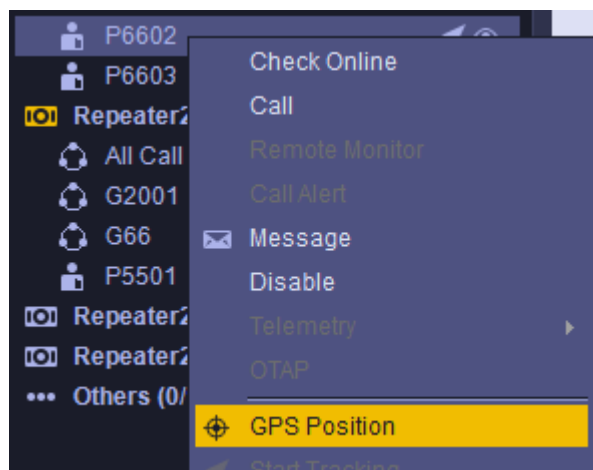
Procedure

Step 1 Log in to the Smart Dispatch Client.

Step 2 Select the desired portable radio from the list.

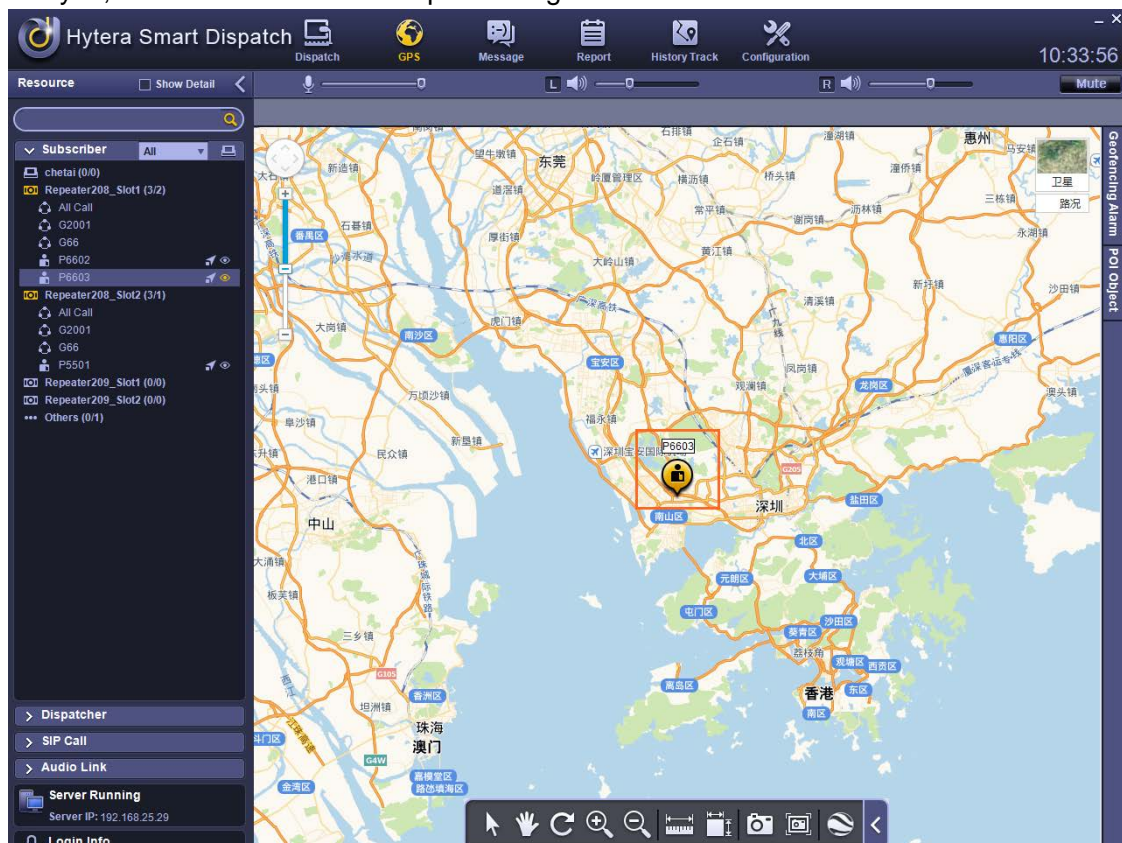


Step 3 Double-click this radio and select "GPS Position".



Step 4 Zoom in the map and check whether this radio appears on the map.

If yes, it indicates that the GPS positioning service is normal.



Expected Result

The real-time position of the portable radio can be displayed on the map.

11.5 Commissioning the Report Service

Prerequisite

All components in the Smart Dispatch system work properly.

Procedure

Step 1 Click “Report”.

Step 2 Define the type of the report.

Step 3 Set the search criterion.

Step 4 Click “Search”.

Expected Result

The search results are displayed.

11.6 Commissioning the Recording Playback Service

Prerequisite

All components in the Smart Dispatch system work properly.

Procedure

Step 1 Click “Report”.

Step 2 Set the search criterion.

Step 3 Click “Search”.

Step 4 Select one recording from the search results.

Step 5 Click the play button to play this recording.

Expected Result

The recording can be played properly.



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